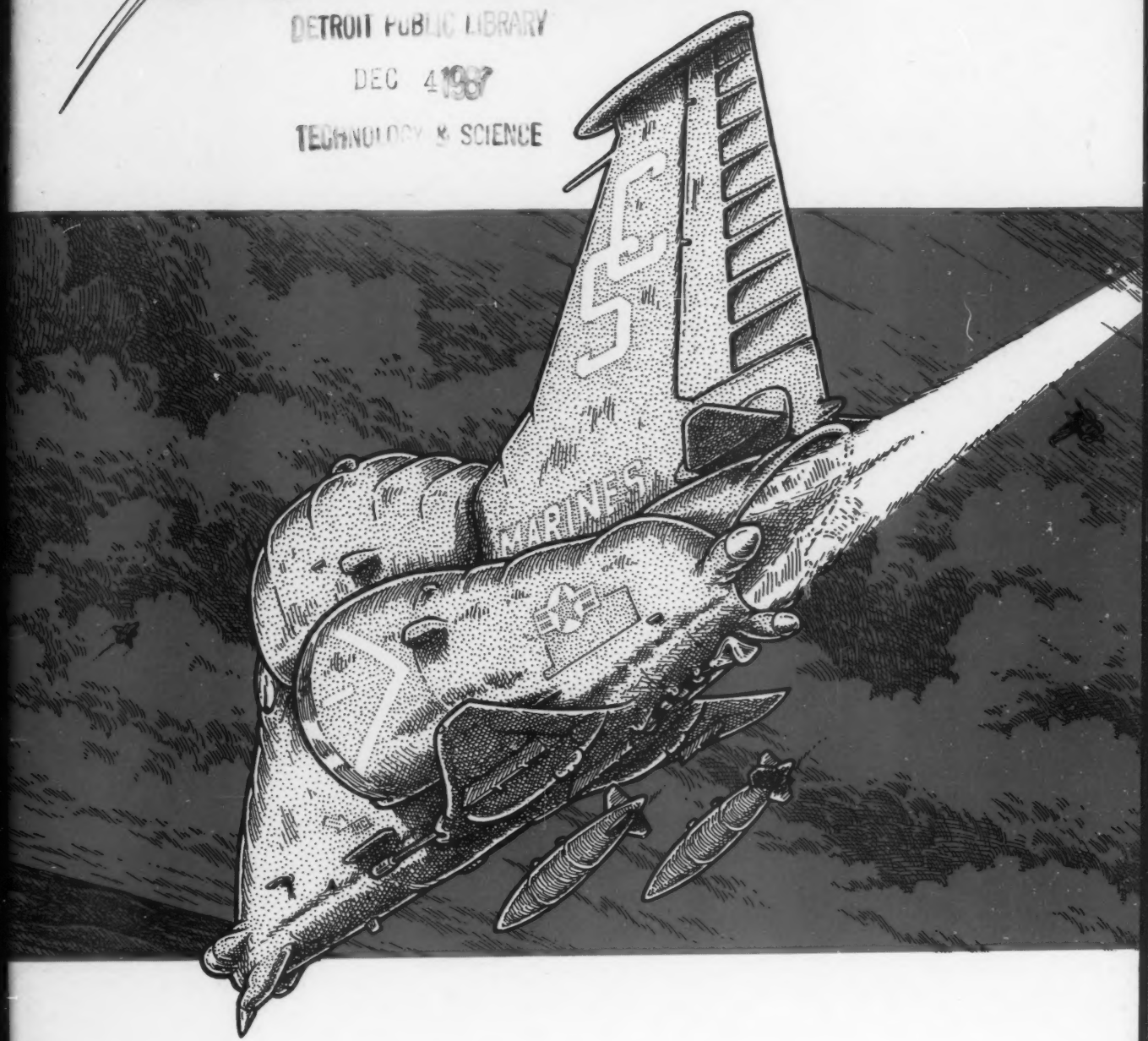
November 1987 The Naval Aviation Safety Review

TECHNOLOGY AND SCIENCE
DETROIT PUBLIC LIBRARY

US NAVY

approach

DETROIT PUBLIC LIBRARY
DEC 4 1987
TECHNOLOGY & SCIENCE



Today's Pro — Tomorrow's Bum

By Lt. Noell Michaels

THE reports read "tactical strike aircraft departs controlled flight during ACM," "patrol aircraft impacts mountain during night IFR conditions," "helicopter lost at sea during routine ops" — all resulting in loss of aircraft and crew.

Hardly a week passes when we don't read about a needless mishap. Upon closer review, we sometimes find that the flight crew involved was among the best and brightest in the outfit. In every aviation community the aviators who are revered for their superior airmanship have earned that reputation by combining thorough training and tactical savvy with an uncanny ability to fly the aircraft.

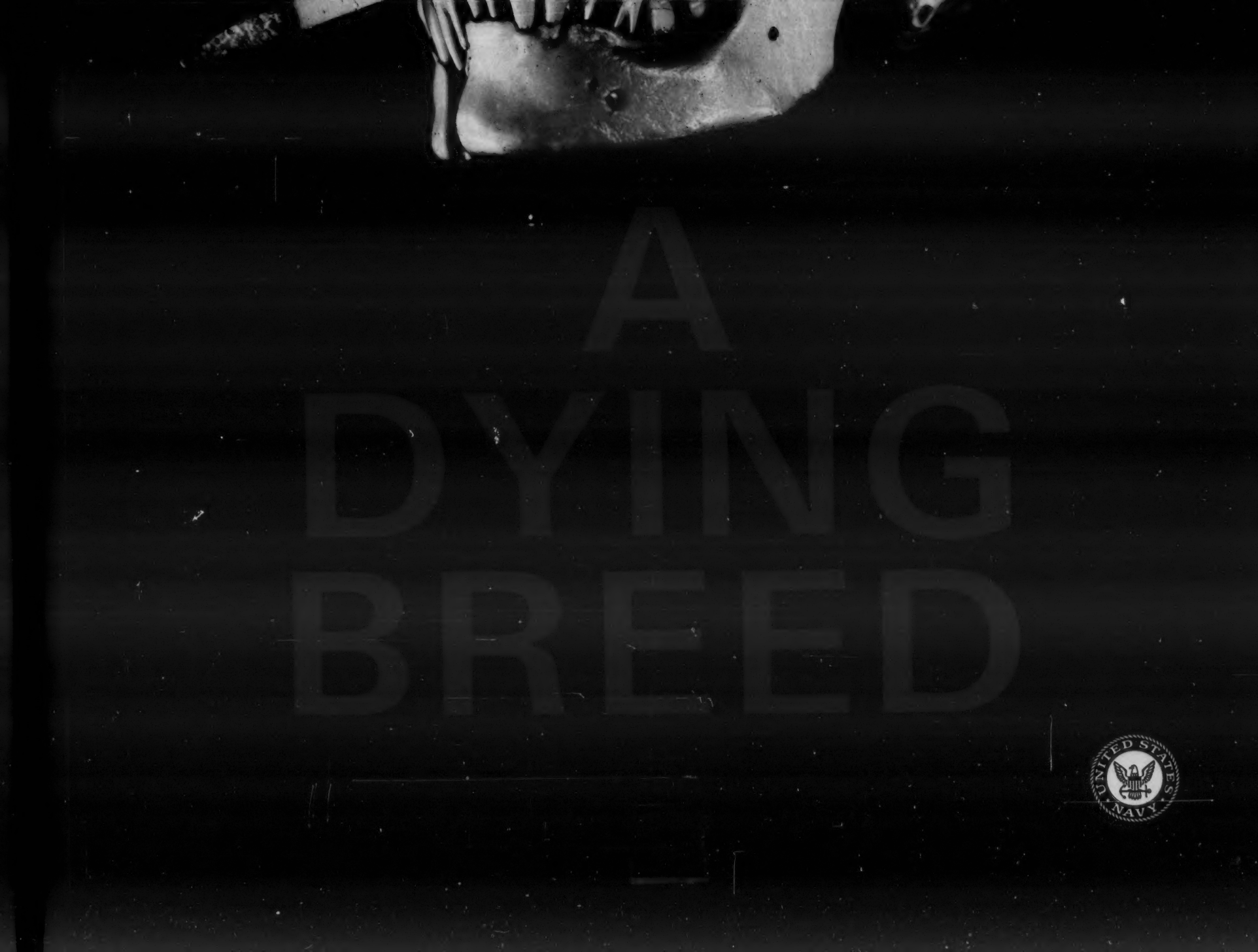
Yet, these aviators, who have proven themselves to be a cut above are often the ones we've read about over the years in one Mishap Investigation Report after another. Is there a common denominator relating these mishaps? Many times the answer is yes. Somewhere each of these people probably throttled back (in a professional sense) from their days of peak performance. The aviator who does that may commit the same "gross error in judgment" that has clobbered so many others before him.

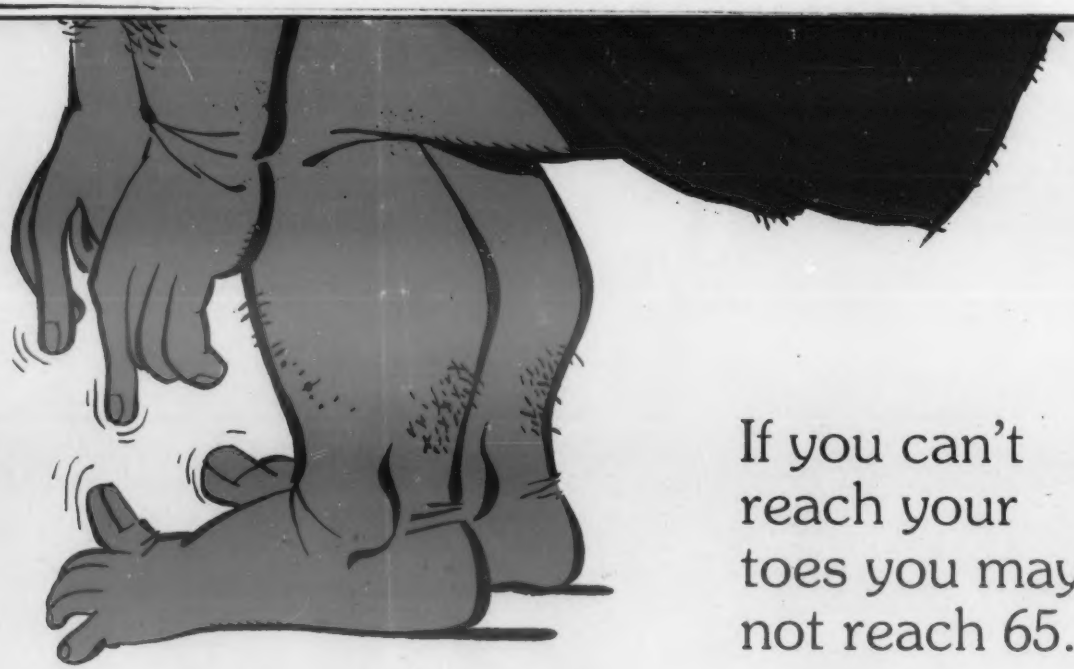
The typical scenario involves a Sierra Hotel aviator who encounters a potentially catastrophic situation but fails to recognize it as such or is overconfident in his ability to avert it. The result of this lack of awareness is always embarrassing and all too often fatal. What leads up to it? Why are the most perceptive, capable pilots, those least prepared to recognize a dangerous situation? The confidence and assurance that a truly superior aviator brings into the cockpit sometimes breeds a sense of invincibility. The belief that it can only happen to the other guy can place him in some very precarious positions. Mistakes can result from overconfidence. Too often, the people we might consider invincible prove they are not.

There is a clear message for the naval aviators who inhabit the kingdom of "the best and the brightest": It takes as much effort to maintain that reputation as it did to achieve it. The aviators attempting to follow your lead must see only the best you have to offer — they all deserve it.

Lt. Michaels is a P-3C plane commander and aviation safety officer with VP 50 at NAS Moffett Field, Calif.

D 202.13:33/5


A
DYING
BREED
UNITED STATES
NAVY



If you can't reach your toes you may not reach 65.

Believe it.

Detroit Public Library
NOV 19 1987
Depository Document

C89-PI-587
Naval Safety Center
NAS Norfolk, VA

inside approach

Vol. 33 No. 5

Cover: Marine A-4Ms by the talented Hank Caruso.

FEATURES

A Naval Aviation Tragedy 2
By Cdr. Richard Shipman. Can this happen in your squadron?

Supervisory Error: Accepted 8
By Cdr. F.J. Patten. Inadequate direct supervision is the root cause of many maintenance errors.

The Crew Rest Dilemma 10
By LCdr. Joseph Arends. What is a reasonable work-rest cycle?

How Much Below Bingo Do You Really Want to Go? 11
By Lt. J.M. Greenblatt. Don't let a normal CQ become a fuel critical situation.

Homemade Video — A Training Tool that Works 12
By LCdr. Jon Jonas and Lt. Harry Molyneux. Using "local" talent and a video camera to punch up your safety education and training.

EMCON — The Thinking Man's Game 14
By Lt. Mark Borup. Some pitfalls of the EMCON game.

Just Another "Routine" Flight 15
By Lt. Stuart D. Terry. A routine flight almost ends in a midair collision.

Who's On First? or, Who's On the Controls? 16
By Lt. Bill Bridgewater. A UH-1N flies an approach with none on the controls.

The Care and Feeding of the Blue-Breasted American Flat-hatter 18
By Cdr. John Schork. Flat-hatting is still a cause of too many accidents.

Just a Humbling Experience 24
By Lt. Mike Warriner. Overconfidence can lead to false security and trouble.

P-3 Merry-Go-Round. 25
By Lt. Rudy Perez. A brake failure leads to a wild ride.

I Had Forgotten How Fast Things Happen 26
By Capt. D.H. Wassmer. A close call in an SH-60B.

A Sure Thing Never Is 28
By LCdr. D.P. Davis. Blindly following a controller's vectors can lead to surprises.

Writing for Approach 29
By LCdr. Dave Parsons. Answers to questions on submitting articles.

My Near Miss 30
By Lt. Patrick J. Danaher, USCG. Miscommunication results in a near miss.

"Thanks XO" 32
By Cdr. Wayne Reeves. OK, all of you XOs out there! How would you handle this?

DEPARTMENTS

Air Breaks 6
Bravo Zulu 20

Rear Admiral D.T. Schwaab, Commander, Naval Safety Center
Col. Donald D. Bergman, Deputy Commander
Capt. J.J. Fleming, Chief of Staff
Capt. Ken Craig, Director Aviation Safety Programs
Cdr. Allen K. Mears, Head, Safety Publications
LCdr. David L. Parsons, Editor

Approach is a monthly publication published by the Commander, Naval Safety Center. Address comments, contributions and questions about distribution and reprints to:

Commander, Naval Safety Center
NAS Norfolk, VA 23511-5796
Attention: Approach — Code 71

Telephone: Commercial 804-444-7416; Autovon 564-7416; FTS 954-7416

ISSN 0570-4979. The contents should not be considered directives and may not be construed as incriminating under Art. 31 of the Uniform Code of Military Justice. Views expressed in guest-written articles are not necessarily those of the Naval Safety Center. The Secretary of the Navy has determined that this publication is necessary in the transaction of business required by law. It is funded and printed in accordance with all Navy publishing and printing regulations and approval of the Navy Publications and Printing Policy Committee. Second-class postage paid at Norfolk, Va., and additional mailing offices. Approach is available for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
POSTMASTER: Send address changes to APPROACH Magazine, Naval Safety Center, NAS Norfolk, VA 23511-5796.

A Naval Aviation Tragedy

By Cdr. Richard Shipman, USNR

FLYING low-level nav routes at 200 feet AGL and 360 knots demands peak performance from the aircrew. The margin for error that exists at 35,000 feet disappears when you're two seconds from the ground. A successful low-level nav route requires meticulous planning, maximum alertness, good crew coordination (in a multiplace aircraft) and strictly following the rules governing low-altitude flight, all backed up with command attention. Take away any one of these elements and the risk of flight increases greatly. Take away *all* the elements and the stage is set for a tragedy. Such was the case with a young A-6 crew.

The first link in the chain was that this particular pilot and B/N were matched up for a cross-country flight. They had both requested and received permission for cross-country flights with other crew members; since their destination desires were similar, they were teamed together.

The problem with this combination was that both crew members were first-tour aviators, with limited experience in both total time and in the A-6. The pilot had 420 total hours, including 152 in the Intruder. What's more, both aviators had displayed below-average performance during their formal training. The pilot had received two downs and a pilot disposition board in the training command, and finished 18th of the last 18 students to graduate from the A-6 FRS. The B/N finished 9th of the last 10 NFOs to complete the FRS, including scoring well below the 25th percentile in the navigation syllabus. He was described as having below-average air sense, being a task fixator, error-prone and very pilot-dependent.

The only way low-time pilots can build flight time is to fly, and the command approved the cross-country. The original cross-country date was moved up a day due to the threat of a tropical storm, and the flight itinerary was altered somewhat. The crew was told to fly the aircraft out of town and then call the squadron after the first leg for further flight clearance.

The first leg of the flight went well. The crew received permission from the SDO to remain overnight at their first destination. The pilot used the opportunity to visit his stepson who was hospitalized nearby. After the visit, the pilot and B/N met with some other pilots from their air wing and went on liberty together to a local nightclub. The A-6 crew left the bar about 0215 local time and got back to their room around 0300. They slept until 0730 and then arose for a planned 0900 launch. The pilot had been awake for 23 consecutive hours before his four hours sleep.

The crew started their engines around 1000. Several abnormalities existed during their man-up and launch. Apparently, only the pilot performed a preflight inspection. The transient line crew noted that both aviators stowed their overnight bags in the cockpit rather than in the extensible equipment platform (or birdcage), the normal bag storage location in the A-6. Finally, the crew requested an engine run-up area to scavenge their engine oil system. The J-52 engine occasionally requires running at a high power setting to scavenge the oil from the sump and extinguish a light that illuminates when oil quantity is less than 80 percent. The light will usually go out after several minutes of scavenging as the oil works into the engine. If the light does not go out after a prescribed period of time, oil servicing is required. The crew apparently needed to scavenge their engine prior to departure but bypassed the designated run-up area to expedite their departure while a commercial airliner circled overhead with gear problems.

The two-hour high-level IFR flight to the crew's next destination, Southwest AFB, was uneventful. After landing, the pilot called the squadron to update their progress and to assess the money situation. It was near the end of the fiscal year, and the squadron was trying to fly their available dollars without overspending. The SDO informed the pilot that they needed to buy 4,200 gallons of fuel that day to fly their allocated share of the squadron's OPTAR.

The crew had originally planned and received squadron authorization to fly a low-level navigation route from Southwest AFB, if the transient line crew would agree to launch and recover the local flight. The transient line crew agreed, but a problem arose related to oil servicing. Upon landing at the Air Force Base, the pilot noted that both engines needed oil. The AFB transient line initially could not locate the proper mil-spec oil required by the A-6. The pilot called back to the SDO requesting permission to fly to a nearby MCAS to get the proper grade of oil. After consulting with the maintenance officer, the SDO granted approval. This meant .that the planned low-level route had to be cancelled.

Meanwhile, the transient line crew found some oil of the correct type and serviced the port engine with 7½ quarts. The

. . . The Intruder struck the ground 655 feet beneath the crest of a ridge atop a 3,500-foot mesa. The aircraft impacted right wing down in a shallow descent, upright, slightly nose down. The wreckage was strewn along a path 1,250 feet long . . .

starboard engine was not serviced. Despite the servicing, which the pilot did not report to the SDO, the crew chose to fly to MCAS anyway, perhaps to complete the servicing of the right engine. They filed a VFR flight plan which contained several errors, departed the AFB and arrived at MCAS approximately 25 minutes later. The transient line at MCAS, familiar with Intruders, drained 1½ quarts of oil from the port engine which had been overserviced by the AFB line. Two quarts of oil were added to the starboard engine.

While at base ops filing back to the AFB, the operations duty officer (an acquaintance of the B/N) told the crew about a scenic route near the Grand Canyon. The crew filed another VFR flight plan, which again contained numerous errors, and departed MCAS at 1620 local, eight hours after their first departure and 11 hours after wakeup. The estimated time en route filed on the flight plan and the true airspeed of 250 knots indicated that the crew intended to fly back to the AFB in a non-direct route at some altitude less than 10,000 feet.

Signs of aircrew fatigue existed all day and continued as it progressed. On start-up at MCAS, the pilot inadvertently shut down the engine. This, coupled with the sloppy and error-filled flight plans and the poor decision-making, were all signs of a crew operating in a degraded mode. The pilot had had only 12.5 hours of sleep in the 87 hours preceding the accident. In the 63 hours before the mishap, the pilot had but 8.5 hours and barely four hours in the 39 hours before the crash occurred. The B/N was only slightly more rested, having 12 hours sleep in the previous 63 hours and four in the preceeding 39 hours. It was a tired aircrew that departed MCAS to try to fly one of the most demanding missions in attack aviation.

At 1717 local, a civilian called the county sheriff's office to report a column of smoke billowing from a nearby ridge line. A Department of Public Safety aircraft was dispatched to investigate. The light-plane pilot confirmed that an aircraft crash had occurred, but he could not identify the type or locate any survivors.

The Intruder had struck the ground 655 feet beneath the crest of a ridge atop a 3,500-foot mesa. The aircraft hit right wing down in a shallow descent, upright, slightly nose down. The wreckage was strewn along a path 1,250 feet long. Both crewmen were killed. There was no evidence of attempted ejection.

Extensive post-crash testing for evidence of mechanical problems revealed little. The AFT TEMP light and right fire warning light bulbs were closely scrutinized by experts from the Navy, Naval Research Lab and the National Transportation Safety Board. Their opinion was that the bulbs were either illuminated or still hot at impact. However, despite extensive investigation of other aircraft components that could have produced a fire, there was no evidence to support a pre-impact fire. No pre-impact mechanical problems were found.

With mechanical problems being ruled out, aircrew factors were studied. The picture that emerged revealed a situation

filled with accident potential.

Aircrew low-level proficiency was the first problem. In addition to the poor low-level performance the pilot had shown in the FRS, he was not current in the mission. His last low-level flight had been in the FRS six months prior to the mishaps. The B/N had flown one low-level the week before the accident, but was considered by the other squadron members to be very weak in that area.

The pilot was having serious marital problems that were made worse because of his concern for his stepson and the effect a breakup in the marriage would have on the custodial arrangment and CHAMPUS benefits. Squadron mates overheard the pilot having a heated argument with his wife before leaving homebase. There was another emotional phone call between the pilot and his wife at the hospital where the pilot stopped to see his stepson. The combination of poor flight performance, failing marriage and financial worries presented a strong argument for the failed or failing aviator profile that has been a factor in numerous accidents.

In addition to his mental state, the pilot's physical condition was marginal. He had experienced severe sleep deprivation over the preceding 87 hours, with minimal sleep the night before the accident. This, combined with the after-effects of alcohol consumed in violation of NATOPS bottle-to-brief time limits, left the pilot in bad shape.

The crew's performance the day of the mishap exhibited clear evidence of degraded judgment and performance.

- The decision to stow the gear in the cockpit rather than the birdcage produced a cluttered cockpit and the potential for interference with flying functions.
- The aircrew decided to take off from the first landing base without scavenging the engines to make sure they had enough oil.
- The crew failed to supervise the servicing of their oil system at SW AFB, resulting in overservicing of one engine.
- The crew failed to keep the SDO informed of their situation; specifically, that they had succeeded in locating the correct type oil at SW AFB.
- The crew elected to file two VFR flight plans, in violation of the spirit and intent of OPNAV instructions.
- The crew made numerous errors in filling out their DD-175s.
- The crew decided to fly an unplanned, non-published low-level route after an already long day with little sleep.
- The crew violated regulations pertaining to alcohol consumption and crew rest requirements.

Supervisory factors were also considered. Was the crew adequately trained and proficient for the mission? Should the crew have been allowed to fly together at all, given their low experience level? Was their flight itinerary adequately monitored after the first stop? Should the command have been aware of the pilot's personal problems? Was there pressure exerted on the pilots to fly out their share of the squadron OPTAR?

There was supervisory error on the part of the command for granting an extended cross-country with a low-level route far away from adequate control over planning, briefing and conduct, given the experience level of the crew, and their lack of low-level proficiency and currency. The command had not exerted undue pressure on the aviators to fly, nor did the CO have sufficient evidence to suspect the magnitude of the pilot's personal problems.

There was some question about the wisdom of allowing the crew to fly a cross-country. A cross-country IFR airways nav flight is usually appropriate and desirable for a crew with that experience level. However, authorization to fly a low-level while on the cross-country exceeded the crew's current capabilities. The command should have kept closer tabs on the flights subsequent to the first leg of the trip.

The actual reason why the aircraft struck the ground was never determined. Possible reasons included:

- The crew became preoccupied with a malfunction in the cockpit (such as a fire warning light) and let the aircraft settle into the ground.
- The crew was flying the aircraft at a slower than normal speed (250 KIAS) since they were not on an authorized VR route. At that lower energy level, the crew may have miscalculated the aircraft performance capability and run out of energy as they climbed over the ridge line.
- An article of clothing or baggage may have come loose in the cockpit, distracting the crew or interfering with the flight controls.

The precise reason why the aircraft struck the ground is probably less significant to cause determination than all of the events that led up to it. The links of the mishap chain had been locking together all day long, with the probability of a mishap increasing as the day went on.

It's difficult to come up with good recommendations from a mishap of this sort. Squadrons should review the FRS records of new crew members more thoroughly, to be aware of any weaknesses or deficiencies they may have. Beyond that, this mishap had none of the common cause factors such as material failures, inadequate emergency procedures or other factors that lead to specific, tangible recommendations.

When a mishap is caused by poor judgment, lack of flight discipline and violation of regulations, the recommendations are much more difficult to come by. Usually, as was the case in this accident, the recommendations fall into the "educate, re-emphasize and re-brief" category. While these measures are usually effective for a period of time, the passage of years dulls the memories of hard lessons learned, and "the word" is not passed on as thoroughly as it might be to the new generation of naval aviators. Then, before you know it, someone has made the same mistake, just as this crew made mistakes that had been made many times before. That's a naval aviation tragedy. Our goal must be, therefore, not to bury our deceased flying-mates and push aside the awful memories, but to strive to keep the memory alive so we never forget the hard lessons learned. ◄

Cdr. Shipman is a naval reservist on special assignment to Approach. He was editor of Approach from 1975 to 1977. On active duty, he flew A-4s and A-7s. Now he is a pilot with Piedmont Airlines.

Hot Hornet. Four F/A-18s were part of a weapons det. On the downwind leg following his third laydown bombing run, one of the Hornet pilots saw his right engine fire light illuminate. He immediately turned toward base and brought the right throttle to idle, informing his flight of the problem.

As the other aircraft joined on him, the fire light went out; there were no abnormal engine indications, and the other pilots couldn't see anything wrong. But the pilot declared an emergency and requested an arrested landing.

As he dumped fuel to get down to landing weight, he decided against bringing the right throttle above idle for the landing. He flew a half-flap, single-engine approach to the arrested landing.

The pilot secured both engines on landing and egressed the aircraft. Postflight inspection revealed that the AMAD coupling bearing had failed, allowing up to one-half inch of play in the power transmission shaft. At normal flight rpm, sufficient heat was generated to illuminate the fire light as the shaft rotated at 14,000 rpm. The pilot's placing the throttle at idle, as well as his decision to leave it there during the landing sequence, reduced the heat generated by the failed bearing. However, the engine manufacturer reps noted that if he had continued operating the engine at idle — 12,300 rpm — or if he had matched the throttles for touchdown, the shaft might have sheared, ripping several high-pressure fuel lines and causing a potentially catastrophic fire in the engine bay.

Well done to Lt. Roger White of VFA 195 for his cool response to this emergency. — Ed.

Clearance to Taxi? Following a functional check flight, the CH-53E landed at an NAF and shut down on the SH-60B flight line. The HAC positioned his helicopter with its main mounts aft of the normally designated area so the resident H-60s could taxi in front of the big Super Sea Stallion. However, he did not inform the H-60 line of his well-intentioned decision.

A local SH-60B crew prepared to man up for a hot pump/crew switch. The Sea Hawk PIC, preflighting his aircraft, walked in front of the parked H-53, noticing the aircraft's main rotor blades extended over the taxiway. At this time, the H-60 was parked north of the visiting 53 at the NAF wash rack.

The H-60 air taxied from the wash rack and landed at a helo pad with ground control clearance. Then it ground taxied to the flight line along established routes.

As they approached the H-53, the H-60 crew discussed possible problems with clearing the Sea Stallion. The PIC called maintenance control for parking directions. Maintenance control responded he could go to a spot beyond the H-53 and it was OK to taxi in front of the larger helo.

A plane captain (PC) and plane captain under instruction (PCUI) positioned themselves to direct the H-60. But the PC departed to get a cranial, leaving the PCUI, who had a cranial, to direct the Sea Hawk.

The PIC in the H-60 decided to go *behind* the H-53 because he thought he had greater clearance from the Sea Stallion's main rotor blades, and

he also believed other aircraft had taxied behind the larger helo during the day. Both assumptions were erroneous. The PCUI repositioned himself in front of the oncoming H-60. The Sea Hawk crew, watching their path of movement, discussed FOD problems along a nearby fence as well as clearance to the fence. The PIC said he would watch the fence from his right seat. The PCUI continued directing the H-60 behind the H-53. The PIC slowed his helicopter as he drew nearer the Sea Stallion.

Things began to happen quickly. A senior chief watching the taxiing H-60 decided the two helos *were* too close and ran toward the Sea Hawk. Another off-duty chief signalled the director about the impending crash. The PC, who had obtained a cranial, now saw the situation and also ran toward the two aircraft. The H-60 continued taxiing as the PIC watched his position. The Sea Hawk's main rotor impacted the H-53's tail rotor.

The PIC braked his aircraft as the PCUI signalled for an emergency stop. As the Sea Hawk's rotors slowed to a stop, the resulting droop caused two more impacts with the H-53's tail rotor.

Although the rotor blades scattered debris over the flight line, none of the line personnel were injured as they ran for cover.

Several factors contributed to this avoidable mishap, including poor coordination within and between flight crew and ground crew. The recommendations following the investigation included painting foul lines on the inbound and outbound taxiways on the NAF's parking areas and ramp and rotor arc outlines on SH-60 parking spots. — Ed.

Pressure Altimeter Failure. The A-6 crews briefed for a two-plane visual weapons sortie. The delivery would include a 20-degree dive, then a 40-degree dive and a 10-degree pop-up. Entering the range, the two Intruders established a 20-degree bombing pattern.

The instructor pilot of one A-6 rolled in at 5,200 feet MSL; the planned release altitude was 2,200 feet MSL. Passing 3,600 feet on the pressure altimeter, the pilot and his replacement B/N were startled to hear the radar altimeter warning tone. The radalt was set for 2,000 feet.

The pilot hesitated for a moment, trying to figure out the problem with the difference in altimeters. He began the pull-out at 1,500 feet AGL. The lowest point noted was 750 feet AGL. After the pull-out, the crew noted the pressure altimeter reading more than *2,000 feet in error* during climbs and descents.

After the flight, the pressure altimeter was removed and checked for possible leakage, but no discrepancies were found.

The radar altimeter proved its worth during this hop. Air crew understanding of the APN-194 radar altimeter's limitations and adherence to SOP concerning its use has saved more than one aircraft and its crew. Recent mishaps have highlighted areas where improvements are required, but until a satisfactory ground proximity warning system (GPWS) is installed in tactical aircraft, the present radalt is what we must live with. Therefore, know its limits and be aware of your environment. Use the equipment in concert with your SOP. — Ed.

Pinned to a Sea King. An airframes troubleshooter checked for leaks on the blade fold/spread system. He was standing on the starboard transmission door of a squadron SH-3H. At the end of the checks, as the blades were being folded for an aircraft respot, he moved in front of the No. 3 blade and stood up to make a final check. Before he could react, the blade pinned him to the airframe.

The LSE conducting the blade fold was unaware of the troubleshooter's predicament until one of the line personnel involved in securing the folded blades, noticed the captured mech and manually pushed the blade away in order to release him.

A medical check revealed the troubleshooter had suffered a contusion of the lower back. He also experienced difficulty breathing. He was placed on 48 hours of light duty. The rotor blade was damaged and had to be replaced.

Inattention and loss of situational awareness on the part of the troubleshooter, and inattention to the overall operation on the part of the supervising LSE, contributed to this incident, which certainly could have been even more serious.

Part of the puzzle was that the squadron had just been indefinitely extended on deployment, which contributed to two other incidents within a 24-hour period. It's during these frustrating times when everyone must be on guard. — Ed.

Coordinated Helo Crew. The Sea King took off from an NAS on a routine logistics run in support of Marine operations in the area. Three miles north of the air station, at 500 feet AGL and 100 KIAS, the SAR swimmer noticed a massive oil leak in the cargo section. He told the aircraft commander (HAC). The copilot at the controls turned back toward the NAS and descended to 200 feet, while the crew prepared for a possible ditching. The HAC broadcast a Mayday, then took the controls. All the instruments seemed normal, and the helicopter descended to 100 feet.

Prior to touchdown, the transmission oil pressure began fluctuating between 20 psi and 50 psi. After landing, the crew secured the engines.

Postflight inspection revealed an oil leak due to material failure of a main oil line cross fitting of the main gear box.

This VC 5 air crew's quick response and coordination prevented more serious damage to their aircraft. —Ed.

Supervisory Error: Accepted

By Capt. F.J. Patten

Mishap cause factors

Maintenance error: accepted.
— failed to use existing publications.
— deviated from procedures specified in the MRC.
— did not use proper test equipment.
— was not qualified to perform task.
— did not use proper tools.
— CDI assumed that the clamp was properly secured.

THE list of maintenance errors that have caused aircraft mishaps, killed some good men and cost us megabucks could go on and on, but you get the idea. Who is responsible for maintenance errors? The CO, XO, MO, SDO? Yes, all of these people. But, what about the work center supervisor? Ah, yes! That is the person to blame. After all, his duties are clearly spelled out in OPNAVINST 4790.2D, Chapter 9, and he is responsible for everything. But wait; the work center supervisor is an E-6 or below. Have we left someone out of the chain? You bet we have! Where is the chief? What is his responsibility?

Inadequate direct supervision is the root cause of virtually every maintenance error, safety violation and injury that occurs. Even when training deficiencies are indicated, supervision is involved since training and qualifications of individuals are basic responsibilities of the supervisor. We have allowed our most technically proficient supervisors (CPOs) to migrate out of the work centers and away from the responsibility for direct supervision. Supervisory duties have been delegated to less qualified people. Upon promotion to E-7, CPOs assume the position of manager, which effectively removes them from supervising maintenance production.

The migration of chief petty officers out of the technical fields has occurred since the creation of E-8s and E-9s but was dramatically accelerated during the Vietnam years to help relieve the severe burden on aviators who were division officers. The loss of technical skill and experience was exacerbated by the high tempo of combat operations. Civilian technical representatives were employed to fill the void.

Recent initiatives to reduce costs and improve habitability aboard ship have caused drastic reductions in the number of technical representatives and the services they provide. Who can fill the void? The chief petty officer is the obvious solution to provide the required on-site training and troubleshooting skills once provided by technical representatives. This solution will cost no more than the reorganization of existing manpower.

In spite of what the manning document says, look at where the CPOs are being assigned in squadrons today. Generally they are assigned as maintenance chief (day/night), flight deck coordinator, line chief (sometimes doubles as the flight deck coordinator), QA chief and ordnance chief.

CPOs do an outstanding job in these assignments, but they account for only about half the chiefs assigned to the average squadron. Where are the rest? They are being assigned as

division chiefs, maintenance chief under training or some other nontechnical assignment. It is important to note that none of these jobs, with the notable exception of the ordnance chief, use the technical skills of our most experienced people.

What to do? Get the chief petty officers back into their technical fields directly supervising the work centers. This is a tall order since it would reverse the trends of the last 20 years or so. It will take aggressive action at the highest levels, but the time is right and the time is now! I recommend that we rewrite OPNAVINST 4790.2D, Chapter 9, and insert "branch CPO" everywhere it says work center supervisor. Change the E-8/E-9 selection board attitude to recognize that successful performance as the branch CPO is more selectable than a division CPO involved in administrative paper shuffling. Update PXO/PCO indoctrination to include proper assignment and use of CPOs. Update LMET courses at all levels to include the concept of CPOs functioning in the technical arena. Modify the CPO indoctrination for new selectees to stress technical management and responsibility for quality productions. Revise Safety Officer School to include a sensitivity to the squadron organization of its CPO supervisors and emphasize supervisory technical competence in preventing accidents. Include CPO assignments as branch supervisors in the inspection criteria of command inspections by the FUNCWINGS and visits of AIRLANT and AIRPAC maintenance advisory teams.

Finally, we should test CPOs for technical skills under the MTIP procedure and train them as required.

Once the shock waves subside from putting chief petty officers back to work in their technical fields, we will have a stronger corps of CPOs and improved productivity through higher quality work. Skills will improve through better on-the-job training and professional training of work center personnel. This improvement is critical in view of the new General Detail (Gen Det) program, which calls for fewer "A" schools and growing your own technicians through OJT. There will be better supervision in the work centers and on the job sites.

Troubleshooting will improve, resulting in reduced material demands and higher readiness. Dependency on technical representatives will be reduced. More mature leadership will exert better control over the younger people. Job satisfaction will increase among workers who perform better because they are better trained and managed. That means higher morale and better retention. There should be fewer maintenance errors that result in aircraft mishaps.

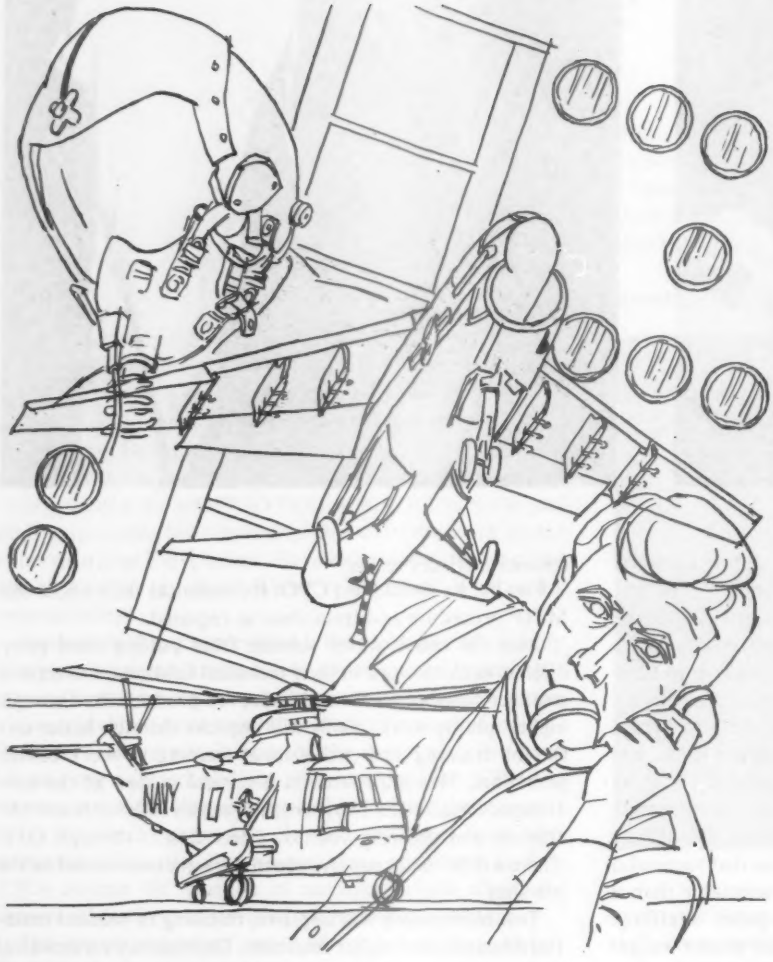
For those who take issue with the concept of using CPOs as supervisors in the technical fields, ask yourself: If there had been a solid, technically competent CPO running that branch, would that accident have happened?

Capt. Patten is the maintenance officer for VA 122.

. . . Fatigue is usually not listed as a primary cause of mishaps. It seems easier to blame the pilot . . .

The Crew Rest Dilemma

By LCdr. Joseph Arends, MC, USNR



A scenario: Pilot J.F. Smith, flying for Northwest Airlines, left Detroit International Airport on Friday at 0600. He flew to San Diego, had a three-hour turnaround, then flew to San Francisco, with final destination in Atlanta at 1700. His total flight time was eight hours.

He then flew via private commercial air to Naval Air Facility Detroit for his monthly reserve drill and was in bed by midnight. The following morning at 0600, he left VR 62 on a flight schedule that included seven separate landings and a total workday of 16 hours. He returned to home base by 2200 Saturday. By regulations, he was allowed 12 hours rest; and by 1000 Sunday, he was on another 16-hour day with six more landings.

Unfortunately, on his return to home base at 0200 Monday, while attempting a ground control approach with limited visibility, he missed the end of the runway and damaged his aircraft's landing gear and fuselage. No one was injured. The cause of the mishap was pilot error with a possible contributing factor of fatigue.

Although this is not an actual report, it describes events that could happen. The stated work-rest cycles comply with FAA regulations and Navy guidelines for air safety.

As written, the report only hints that fatigue may have been a contributing cause. That is realistic — fatigue is usually not listed as a primary cause. It seems easier to blame the pilot. Yet fatigue cannot be ignored or downplayed.

There is a constant debate about what constitutes a reasonable work-rest cycle. Where does operational necessity stop and pilot safety begin? The staff of the Navy Aerospace Medical Research Laboratory in Pensacola, Fla., studied this issue for some time. They concluded that the best work-rest cycle is 12 hours of work with 12 hours of rest.

Although there are no blood or urine tests that can prove this hypothesis, performance tests of grammatical reasoning, short-term and long-term memory and data interpretation have strongly suggested that the 12-12 cycle is best. However, verifiable research data and accident data to support this assertion may still be years away.

Over the course of one flight, mood questionnaires have clearly shown, even in the course of 12 hours, that air crews demonstrate less positive personality traits and more negative ones. Subjectively, they are more fatigued and more irritable.

Attempts at longer periods of rest (12 hours of work, 24 hours of rest) disturb circadian rhythms more than shorter rest periods. Once these rhythms of sleep, work and normal bodily functions are disturbed, it takes several days to readjust. In addition, changing time zones and a person's inability to sleep during daylight hours can disturb these rhythms even more. The earliest or most sensitive indicator of fatigue is judgment. Judgment errors may be more difficult to measure, but they certainly cause accidents.

The Soviet Union has a work-rest cycle of 12 hours of work and 36 hours of rest. Although this may appear to be ideal, it is not operationally practical nor economically feasible.

In P-3 aircraft between 1969 and 1985, there were 44 mishaps. Two were caused by fatigue; seven reports listed fatigue as a possible cause. Nine (or 20 percent) of the total were fatigue-related.

The pilot is caught in the middle. Commercial airline companies are not concerned about weekend military flying, and the military adopts the same attitude about civilian flying. The "can do" attitude prevails. There is strong community pressure not to back away from assigned missions. If the pilot asks for relief from what he perceives as an over-demanding schedule, he may be labeled a "gold brick." But pilots understand the demands of a schedule, and they understand the "hurry up and wait" reality of aviation.

To improve skills needed during wartime, there is a need to practice under similar conditions. You push at the same rate of work and stress as war conditions to save lives that may be at stake in the future. However, in a nonemergency situation, how does working a 16-hour day followed by 12 hours of rest and another 16-hour day (32 hours of work out of 44 hours) make you a better pilot?

Working these long fatiguing days does not make you better the next time when working under fatigue conditions. Skills improve when people are alert and rested and have higher energy. Practicing when fatigued does not improve skill and does not teach you how to cope with fatigue. As long as we are not at war, why push to this level of fatigue and jeopardize life? It simply is not logical. Scheduling pressure may lead to career attaboys, but at what expense? ◄

LCdr. Arends is a flight surgeon with VR 62 at NAF Detroit, Mich. He practices medicine in Troy, Mich.

How Much Below Bingo Do You Really Want to Go?

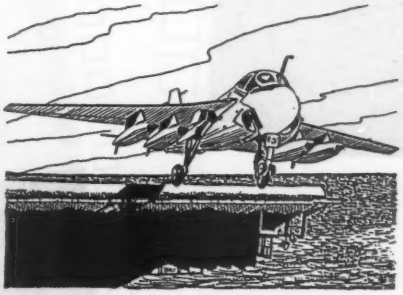
By Lt. J.M. Greenblatt

IT is a nice October day off the southern California coast. A normal CQ is in progress. The first pilot I fly with gets his touch-and-go/trap. The fuel state is 7.0 — no problem. A hot-seat switch of pilots and we're off.

The second pilot gets his touch-and-go/trap. The fuel state is now 4.9. No problem yet. Another hot-seat switch of pilots and a top off of fuel to 8.8, I expect. It doesn't quite go that way. The pilot hot-seats, but we don't refuel. Now they're getting ready to break us down. I say to my third pilot, "Aren't they going to top us off?" He looks at me and says, "Nope. Let's go with the checklist. They're breaking us down."

We get to the cat with 4.6. I rogered the weight board and off we go. On his touch-and-go pass I call the ball with 3.9. I'm starting to get a little nervous. In the back of my mind, I start to consider bingo. Our primary divert field is VFR, so weather is not a problem. The field is approximately 63 NM away.

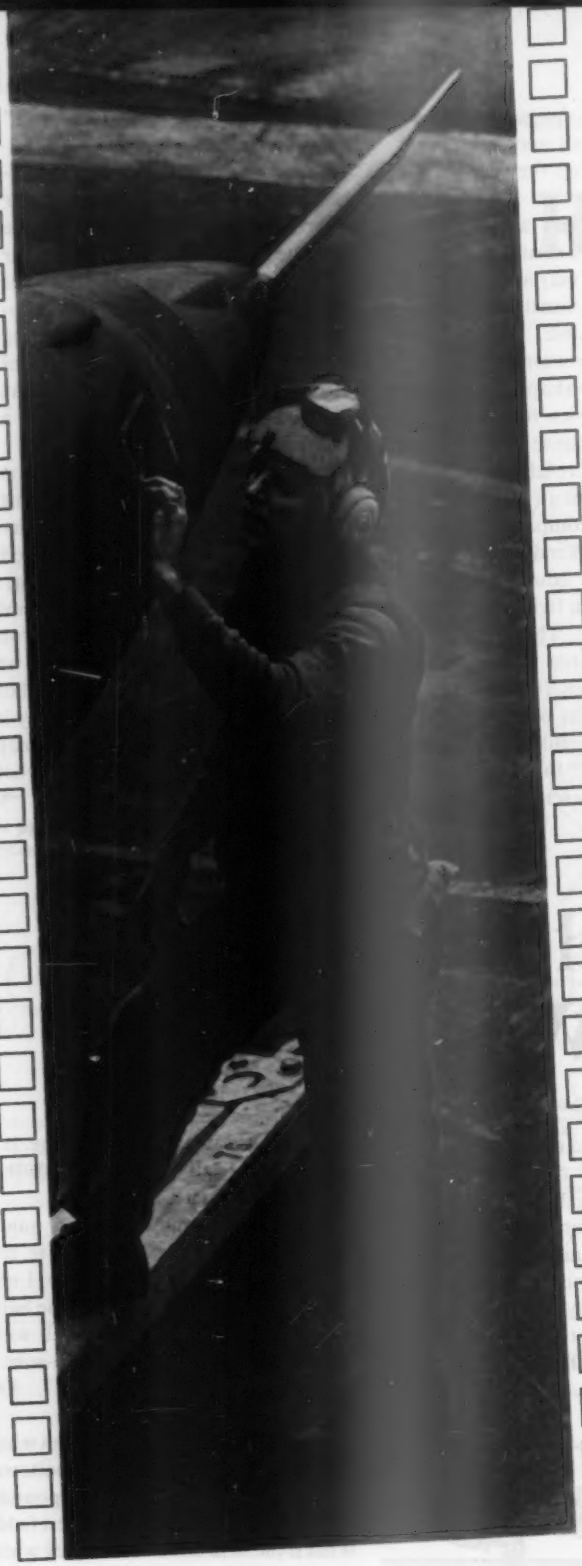
A quick look in the PCL and our bingo fuel was 3.0. OK, now we're at the 180. I glance down at the fuel gauge. It's showing 3.3. I call the ball with 3.3. But instead of a trap it's a bolter.



The pilot and myself have a quick discussion on bingo. He wants to try another pass. I reluctantly agree. I tell him we will be below bingo on the ball. He acknowledges. I call the ball with 2.8. The flight ends with a "fair 3-wire." The fuel gauge is showing 2.7, 300 pounds below bingo.

The flight ends uneventfully, but what if we had been waved off or boltered again? We would have been 300 pounds short when we arrived at the divert field. What if the field had a fouled deck when we arrived? The big question is, how much below bingo do you want to go?

Lt. Greenblatt is an NFO in EA-6Bs with VAQ 130 based at NAS Whidbey Island, Wash.



Homemade Video – A Training T

EVERYONE seems to be looking for a "new angle" in safety education and training these days . . . an innovation that will finally get the message across to everybody. We are using a new and effective tool that, while not a "magic breakthrough," has greatly enhanced our own safety program while increasing squadron safety awareness and participation. This new tool is the portable video camera and VCR playback system.

It's difficult, if not impossible, to find current 16mm films on new equipment recently introduced to the fleet — for example, the emergency escape breathing device (EEBD). While a slide-tape show on the EEBD is available, we have yet to find a slide-tape presentation as effective as a film or videotape. Sometimes, for a particular topic unique to our squadron or ship, no films or slide-tape presentations exist. It's a very combersome, expensive and difficult chore to create a film in the 16mm format. While it's relatively simple to generate a slide-tape show, we have found that viewers frequently tune out static pictures, whereas the action in a safety film holds their attention. The ideal solution to these problems seems to be videotape.

We procured a VCR that we've found useful in a number of ways. Safety training is one of the biggest uses of our system. Each of our squadron work spaces and living spaces on board the USS *Saratoga*, equipped by the ship with its own TV, has also been wired to receive our own broadcasting station, WVAW, from the ready room. With little more than a video camera and a VCR, we are capable of holding squadron-wide training at any hour via live or taped broadcasts. We have alleviated the problem of getting all our personnel in one place to sit down for a brief, as well as ensuring our night

Tool That Works

By LCdr. Jon Jonas and Lt. Harry Molyneux

check personnel receive the same quality of training as day check.

In the short period since its inception in our squadron, our video system has proven to be a most valuable asset. As an example, we televised live briefs by an air wing flight surgeon on heat stress and heat-related injuries, and by HS-3 wet crewmen on water survival and helicopter pickup, both with a phone-in question and answer session afterward. Both broadcasts were recorded, so we have added to our own library of safety training aids and can reuse them as needed.

We've employed our VCR system in other ways, too. As noted earlier, EEBD training aids currently consist of a slide-tape show that covers the important things but has something missing, namely motion. With our damage control petty officer's assistance, we recorded a training session on the use of the EEBD. The feature is just a few minutes long, but it shows the entire sequence of operation of the EEBD. The same thing was done with the oxygen breathing apparatus (OBA).

New video training ideas keep appearing every day. For indoctrination of people assigned aircraft integrity watches, we've produced videotapes describing flight deck firefighting equipment (showing the location, symbols and operation of AFFF stations, saltwater hoses and catapult steam smothering valves) as well as an illustrated guide to proper aircraft tie-down techniques. A similar tape was prepared to aid people reporting to the ship for the first time in getting their damage control training completed. Using our ever-expanding library of videotapes ensures that our newly assigned men receive quality training at no inconvenience to others.

A major benefit of producing our own videotapes is the increased enthusiasm in the squadron safety program. We use "local talent" as actors, people who are well-known to their shipmates. When these people take an active role in helping produce a program, the message comes through more strongly. With one of our line division plane captains in the leading role, we made a tape on the well-dressed flight deck crewman, showing a proper daily inspection of his cranial helmet and flotation vest and the proper way to wear all of his flight deck clothing. It was an instant success.

To create a FOD awareness videotape, we used actors and aircraft from other squadrons in the air wing, giving some of their people the chance to be stars. We now find we have people volunteering for participation in the creation of these tapes. Not only have our safety programs been bolstered, but a command commitment to our established safety/operational readiness goals has been met with little effort . . . and some fun, besides!

Saratoga had a super ship's information, training and education (SITE) TV system installed during the Service Life Extension Program (SLEP), which has been of great value to us in our productions. The TV studio has editing and dubbing equipment, plus the expertise to go with it. The TV studio crew has proven helpful with technical advice on shooting different scenes, and cooperation from them has allowed us to produce a more finished product and run credits at the end of our programs. We have even used their cameras and operators from time to time when our own equipment was inoperative. Still, occasional schedule conflicts proved the benefit of having our own VCR equipment to shoot scenes when and where we desired.

This tool is flexible and easy to use. Expensive 16mm movie-making equipment is not required. Used videotapes can be recorded over with new programs as old information becomes outdated. Editing is simple. If a scene needs to be reshot, the same tape can be reused. Larger audiences can be reached simultaneously and more efficiently with either a live broadcast or a taped program. And everyone wants to be on TV!

It's working for us. ◄

Important note: *Refer to OPNAVINST 5290.1 and CNO letter 007D12/448344 of August 1983 before attempting to purchase VCR equipment with government funds. — Ed.*

LCdr. Jonas and Lt. Molyneux are assigned to VAW 125 on the USS *Saratoga*. LCdr. Jonas is squadron safety officer and an E-2C pilot while Lt. Molyneux is NATOPS officer and an E-2C flight officer.

EMCON

The Thinking Man's Game

By Lt. Mark Borup

RECENTLY, while I was returning from an EMCON night bombing mission, radio silence was broken by a conversation on base frequency. Apparently, the E-2 had mistakenly provided vectors to the wrong aircraft. As a result, an A-7 over 150 miles from the ship was following vectors to marshal intended for an A-7 that was much closer. After marking on top of the assigned marshal point, the pilot of the Corsair began the usual preparation for a night carrier landing. However, the pilot sensed something just didn't seem right. The marshal point he was vectored to was a lot closer than he had originally estimated. He suppressed his anxiety after being told he was properly established.

The visibility was exceptional, even with no moon; and his doubts began to surface again when, despite the good visibility, he couldn't see the lights of other aircraft marshaling above or below him. A quick sweep of the radar didn't help. Finally, he called a squadron playmate in the marshal stack and requested he switch to air-to-air on the TACAN. As the DME rolled up during the short count, his shock and frustration grew rapidly. He was over 100 miles away from the stack with little time or gas to waste. This story had a happy ending, but it just as easily could have ended in disaster.

All carrier aircrews have played the dreaded EMCON game. Unfortunately, some have lost. Day or night, it's obvious to an observer that without a solid game plan and sound execution, "living on the edge" takes on a whole new meaning.

With recent technological advances in electronic warfare, EMCON is playing an ever-increasing role in the tactics of battle group commanders. Modern tactical aircraft are equipped with systems that greatly simplify the navigational problems created by EMCON. When you're operating 200-300 miles from the carrier during "blue water ops," it's easy to lose track of your relative position. Total reliance on internal navigation systems is an insidious habit that can quickly create an extremis situation. Most navigation system errors develop gradually and can be difficult to recognize early. If system degradation continues undetected, erroneous indications could lead to disaster.

Having said all that, here are some tried-and-true tips to help even the most inexperienced aviator become expert at finding that "needle in a hay stack" with confidence and consistency:

First: Do your homework. Know your TAC PROS cold. There shouldn't be any unanswered questions on EMCON departure or recovery procedures prior to flight. Understanding the procedures before you come to the brief helps reduce the "helmet fires" in the cockpit.

Second: Don't rely on any one system or instrument. Use everything available to you, including your *brain*! Reference and cross-reference frequently (including your wet compass). Never blindly follow vectors. Always be wary; don't let yourself become so engrossed in your mission that you forget this very important concept.

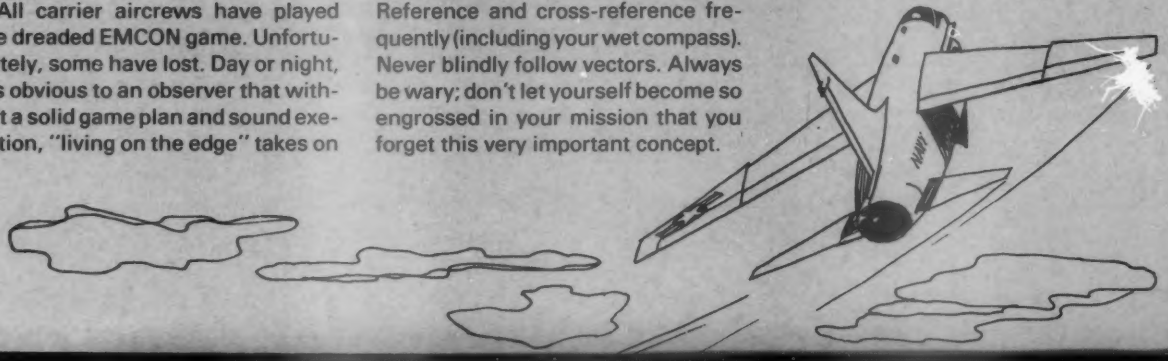
Third: Constantly practice dead reckoning navigation. Sound excessive? Not so. DR is the single most important factor that separates the experienced from the inexperienced. Whether you do it in your head or on a kneeboard card, if you practice heading and distance problems, it may save you some day when your system tries to trick you into thinking you're somewhere you're not.

Fourth: When all else fails, use common sense. Look outside your cockpit. Sun position may be a good clue. Stellar navigation is a case in point, where a little knowledge goes a long way. Relative positions of other ships you fly over may offer another clue. One might even have its TACAN radiating. This could be very useful if you briefed the channels that might be used.

Fifth: Finally, when you're lost, go right to the 3 C's: climb, confess and conserve. Most importantly, confess. Confess it to yourself! Until you do, precious time and fuel may be wasted before you take positive action. Remember, a little embarrassment in the ready room sure beats spending the night freezing to death in your raft.

Next time the ship turns everything off, think about it; your life may depend on it! ●

Lt. Borup flies A-7Es with VA 27. He has also served with VA 122 and VAQ 34.



Just Another "Routine" Flight

By Lt. Stuart D. Terry

WE stared at the briefer on the television while he finished briefing another standard flight for another routine mission in the Indian Ocean, ending with a pinkie recovery. Nothing we hadn't already done 50 times this cruise. The weather was typical for the I.O. summer: a haze layer extended from one thousand to 20K. I took over in the ready room for our individual briefing, and now my crew stared at me as I ran through the NATOPS briefing guide.

I remember a lot of "standards" being said, including the part about lookout doctrine. (The primary thing on everyone's mind was getting down to the dirty shirt cafe for dinner before we had to man up.) After a quick meal, we hustled to the flight deck, manned up and executed an uneventful Case III launch. We checked through Strike, and proceeded to station at 21,000 feet.

"Alpha Three Xray, 607 on station, your control."

"Roger 607, radar contact."

There we were, looking at the same old signals in the same old airspace and flying the same old orbit just as we had time and time before on this cruise. I told the guys in the front that this looked to be another one of those boring I.O. hops.

"Why don't we try the HF? Maybe we can get the news on the BBC or Voice of America."

"Good idea," I agreed and passed the freqs over ICS.

The next 45 minutes passed in much the same way with the guys up front keeping us on station and us in the back staring at our scopes.

Then a movement out the left side of the aircraft caught my eye. I looked up in time to see an F-4 about 100 feet away in a nose-to-nose pass, pulling for all he was worth to keep from hitting us. It was all over quickly! He'd missed us — but not by much. After I got my heart out of my throat, I came up on the ICS and asked, "Anybody up there see that Phantom that just tried to take our left wing off?"

There was a moment's silence. "No . . . where is he?"

"Somewhere behind us now. You guys will never know how close we just came to . ." I really didn't want to think about it.

"Did anybody hear any traffic calls over the radio?" Nobody had.

"I think we better talk about this one on deck."

"Concur."

After the recovery we located the crew of the F-4, and it turned out they were looking for us, too. By putting all the pieces together, including calling our controllers on the phone, we came up with what had happened. The Phantom had received a traffic call at 15 miles and called a "tally" a few minutes later. We never received a traffic call on his position. The pilot of the F-4 remembered looking at us and deciding we were in a turn away from him. Actually, we were turning into him, but the haze was distorting his perspective. We never saw him because he was coming at us coaltitude, out of a setting sun. The one traffic call was all either of us had, the tally on his part being enough to satisfy everyone manning radars that all was under control despite merging plots on their scopes. When the Phantom driver looked at us again, he realized what was really going on. He did what he described as "some serious, no fooling, evasive maneuvering" to miss us; and that was when I saw him flash by. Thankfully, we all ended up safe on deck and much wiser about lookout doctrine.

Reflecting on the incident, I am convinced that it was nothing that we did that allowed all of us to avoid a midair and live to fly again. I *know* that there are at least six aircrew who will be a lot less complacent about so called "routine" ops. I suspect there are also a couple of controllers who are paying closer attention to what is going on in front of them.

The bottom line is that all the words of wisdom you hear, deployment after deployment, are beat into you for a reason. Every lesson, trend and human failing that you hear about is passed along to keep you from ending up as a statistic. You can take that for what it's worth — just another close call story, or something you tuck into the back of your mind to recall the next time you feel yourself slipping into a complacent frame of mind. If you don't pay attention, then I hope you end up as we did — alive to talk about it. ◄

Lt. Terry is an FRS instructor at VAQ 129, NAS Whidbey Island, Wash. Previously he was deployed with VAQ 136 in USS *Midway* (CV 41).

. . . I casually asked my copilot where he was going.
His response was a rather unnerving,
"What do you mean, where am I going?"

Who's On First? or, Who's On the

By Lt. Bill Bridgewater

IT was my first night flight as a HAC in the UH-1N. I didn't think this night would be any different from the dozens I had already flown as an H-2P except that now I was logging "A" time. The brief was routine. My copilot and I discussed the emergencies we might have, fuel requirements, and who was responsible for radios and navaids. I'm sure I said something about ensuring that we relinquish the flight controls positively. We took off from NAS Far West Island. Our plan was to take off at dusk, enjoy another routinely beautiful sunset as we flew around our tropical island, pick up a couple of PAR approaches for proficiency training, and then transition to the helo pad for some night fam work. We would be on deck by 2000 and back at the house for a brew and a movie by 2030.

About 40 minutes into the flight, we called up Island GCA which proceeded to give us our squawk, missed-approach instructions and altimeter. I rogered the squawk and read back the altimeter like a responsible naval aviator always does. I don't think my copilot wrote down the missed-approach instructions since we had heard the same one for 14 months now. Anyway, it was VFR with a scattered ceiling at 3,000 feet.

I told my copilot I would fly the first approach and give the aircraft to him at decision height. The approach profile was routine, and I flew the Huey down the glide slope with minimal deviation. The twin Huey with a stabilizer bar (no AFCS) is not the world's greatest all-weather bird. It has no pedal trim, no heading hold and collective friction for altitude hold, which means that the collective will stay where you put it but not necessarily maintain a given altitude. The twin Huey also uses magnetic force trim that maintains the cyclic wherever you last positioned it, so any input to the collective requires a force trim change to the cyclic. This naturally requires the pilot to maintain a constant and demanding instrument scan in IMC.

GCA called decision height at 200 feet and one-half mile to touchdown on Runway 31L. I added power to arrest my rate of descent and then added more power and retrimmed the aircraft to start a slight climb-out. I then casually said to my copilot, "You've got it." Mistake number one.

At about the same time, I was distracted by something out the port window, which took my head out of the cockpit for a few seconds. Mistake number two. When I returned my view back into the cockpit, everything appeared normal, but something wasn't quite right. I looked down the runway and observed the right side runway edge lights passing underneath the left seat

e Controls?

that I was occupying. I wasn't too alarmed because I was thinking that maybe my copilot had not picked up his drift yet but would momentarily. Mistake number three. By now we were a third of the way down the runway with the aircraft continuing to drift right, and I noticed that the Radalt was reading 150 feet and descending. At this point I casually asked my copilot where he was going. His response was a rather unnerving "What do you mean, where am I going?" I instantly realized no one had been on the controls since we had reached decision height. I jumped back on the controls and brought the aircraft back on centerline and began a climbout as I heard my crew chief mumble some obscenity.

Fortunately, this incident only resulted in a slightly shaken flight crew and an embarrassed green HAC. However, the potential for a major mishap was alarming. What if both pilots had their heads out of the cockpit for a slightly longer time? The descent would have probably resulted in a crash. If we were lucky and didn't hit the ground, the right drift would have quickly brought us over the parallel runway where we could have collided with departing traffic.

What was the cause of this potential mishap and what can we do to prevent it? It wasn't just the failure of the flight crew to make a proper pass of flight controls. The failure occurred before the brief even took place. The incident occurred because it was just another routine flight. We assumed that the pilot, copilot and air crewman knew exactly what they are supposed to do in every situation. How many times have you noticed that the brief is more detailed and specific when the mission is unusual?

Maybe an alarm should go off in our heads everytime we are schedule for "routine" fam flights. The brief prior to a routine flight is just as important as the brief before a weapons delivery.

Do you always specifically brief how you will pass control to your copilot? Do you make sure that you use clear verbal signals such as "You have control of the aircraft," or "You have the controls," answered with a specific "I have the controls"? Or is it an ambiguous "I've got it" or "You've got it"? Do you make it understood in the brief that it is the responsibility of the pilot relinguishing controls to visually ensure that the other pilot has indeed assumed control of the aircraft? Only by a proper preflight brief can you ensure that each member of the crew knows what they are supposed to do and how they should do it. Decision height is not the place to be wondering "Who's on first?" ◄

Lt. Bridgewater is presently assigned to HSL 35, and is the maintenance officer for Det 10 in USS *Stein* for a WESTPAC deployment.

The Care and Feeding of the Blue-Breasted American Flat-hatter

By Cdr. John Schork

FLAT-HATTING: the deliberate violation or disregard of official rules and procedures by an aviator for the purpose of seeking thrills or impressing another party. This frequently results in destruction of aircraft and death of the aviator.

How often have you read an accident report that involved flat-hatting and asked yourself why. The record is disheartening: low passes over housing (fatal crash), air show over the old farm (fatal crash), aileron roll on takeoff following an air show (fatal crash). The tragedies go on and on. How can the CO, ops officer or safety officer combat flat-hatting? What does it take to prevent professional aviators from deviating from the established Navy rules and common sense?

First, how do you identify the aviator or crew that is going to flat-hat? There are no standard traits or characteristics that will consistently indicate who the high-risk aviators are. However, more than likely it will be an aviator who has enough time in a particular aircraft to feel comfortable. His experience, though, will normally be in the routine mission areas of his aircraft. Unfortunately, flat-hatting accidents often occur when an aviator is trying to impress someone by entering a flight regime for which his aircraft wasn't designed, and for which he wasn't trained. The results are predictable.

The next point the chain of command must deal with is why do aviators feel the need to break rules and take enormous chances? Is it an attempt to get a thrill or to feel the exhilaration of flight on the borderline of the envelope? In some cases that is true: "How low, how fast can I go?" The nature of the professional military aviator is to be aggressive and demanding of himself. How can he really have the right stuff unless he has tested himself, or compared himself to the sea stories of the more experienced? Any CO or XO can remember when the same thoughts went through their minds. At that stage in our professional development we are all bullet-proof.

How could you become a member of the club unless you had done some of the forbidden rites of initiation? So the need to prove something to either himself or his peers is one reason for flat-hatting. There is another reason, a variation of the first that makes even less sense: some pilots want to be performers. The exhibitionist who puts on a "performance" is often more dangerous because to really impress a ground observer, you must violate all rules and standards of safety. There may be any number of reasons that an aviator decides to show off. The result is still the same.

How can the organization combat flat-hatting? There are no cut-and-dried answers. Every squadron is different, people are different and each group will need special handling; but here are a few ideas:

Professional Development. The established missions of all naval aircraft are demanding in their own right. Whether it be landing on a small boy with a pitching deck, a night low-level in bad weather or setting down a heavy P-3 on an icy runway, all aircraft missions are demanding. Normally, experience leads the way when the demand is high, and that is the smart way for an ops officer to go. However, would not the accelerated development of the young aviator into positions of increased responsibilities provide an outlet for that aggressive spirit? Placing large demands on capabilities brings out the best in most aviators. There is, of course, a fine line between tasking a young aviator to his full potential and getting him in over his head.

Unfortunately, the tendency is to err on the conservative side, much to the frustration of the junior aviators. Holding off on that strike leader designation for just a little longer is the easy way out for a command. If there is a legitimate concern for an individual's development, fine. Train him some more, but don't hold off too long waiting for that warm and fuzzy feeling. Whether it be PPC, HAC, division leader or air wing strike leader, training for professional development will satisfy the need for recognition and reward. The lieutenant who plans, briefs and leads a 20-aircraft strike doesn't need to flat-hat to be S.H. He is S.H. by virtue of his

. . . Unfortunately, flat-hatting accidents often occur when an aviator is trying to impress someone by getting into a flight regime his aircraft wasn't designed for and for which he wasn't trained. The results are predictably disastrous . . .

designation.

Primary Mission Flying. It is very possible that flat-hatting is the result of frustration with a mission. Any crew who is constantly involved in the non-demanding portions of their mission (tanking, CAP, SSC, etc.) may very well feel the need to "thump" someone, make an inverted pass or put on an air show. However, command reinforcement of all aspects of the mission, especially the demanding ones, can prevent that.

An officially scheduled, briefed DACM program should prevent impromptu hassles. Emphasis on high-value training —live ordnance, real subs, aggressor aircraft — will keep challenging the young aviators. This will contribute to both professional development and real combat readiness.

Command Policy. It is foolish for commanding officers to expect that their aircrews will follow all the "rules" because they're written down. Sure, OPNAVINST 3710 prohibits certain activities, but don't expect that to register with all of your aircrews. When was the last time you saw anyone voluntarily reading 3710, course rules, or SOPs? What **does** register is their own commanding officer looking them right in the eye at an all-crew meeting and letting them know exactly how he feels about flat-hatting.

When the CO says, "If you are caught flat-hatting in this squadron, I'll have your wings — no exceptions," that registers for a long time. There will be no doubt in anyone's mind what the policy is in their squadron. A follow-up SOP or memorandum in writing will further serve to bring the point home: If you try something stupid, your wings are on the line!

Leadership By Example. Finally, it is imperative that the correct example is set by Rocket One and the senior aviators. Follow the rules; **no exceptions**. Let it be known that there are not two sets of rules. The emphasis on superior airborne performance will promote a climate in which flat-hatting cannot live. When S.H. means bombs on target, exact navigation and the best landing grades, aviators don't have to get their strokes with low transitions or inverted passes.

So there are a few ideas on the care and feeding of the Blue-Breasted American Flat-hatter. With constant attention by squadron COs it may be possible to achieve the ultimate goal: complete extinction of all flat-hatters!

Cdr. Schork is the executive officer of VA 95, an A-6E squadron based at NAS Whidbey Island, Wash.

PH3 John K. Sawyers

Left to right, front row, AXAN Gray, AOAN Swindler, Lt. Musmansky, Ltjg. Shirley, AW2 Smith, AT3 Braswell.
Left to right, back row, AW2 Small, AD1 Mullins, Lt. Laufer, Lt. Koshiol, Cdr. James, AMH2 Addoms, AW2 Peters.

Crew Eight
VP 6

Following a seven-hour P-3 ASW patrol, VP 6's Crew Eight (PPC Lt. Koshiol, copilot Lt. Laufer and flight engineer AMH2 Addoms) initiated restart of the loitered No. 1 engine, 830 nm from NAS Barbers Point. All initial restart indications were normal. As the fuel and ignition switch was placed on, engine rpm climbed rapidly through normal 100 percent rpm, stabilizing with an audible 105.5 rpm overspeed. The emergency shutdown handle was pulled in accordance with NATOPS, but the prop failed to feather. The crew executed emergency procedures in an attempt to get the prop feathered but with no result. The crew discussed their options.

Moments later rpm surged to gauge limit, 125 percent rpm, actuating the propeller/engine safety decoupler. With the initial overspeed and subsequent decouple, the prop was now fixed-pitched and windmilling with rpm a function of TAS. To maintain prop rpm within design limits, airspeed was limited to an agonizing 150 KIAS.

BRAVO ZULU

Over the next two hours, Crew Eight struggled to keep the rpm within limits while navigating around imbedded thunderstorms, encountering icing and moderate turbulence. The flight station coordinated with the mission commander, Cdr. James, who initiated emergency clearance to NAS Barbers Point and coordinated tactical crew efforts in preparation for a possible ditch or bailout.

Following two hours of laborious transit, No. 1 engine developed oil quantity problems, which resulted in oil spewing from the engine, depleting engine oil quantity to zero. ETE to the closest field, NAS Barbers Point, was two hours. All crew members were removed from the prop's plane of rotation in anticipation of gearbox failure and prop separation. Over the next two hours, the airframe was periodically raked by cyclic vibrations as the gearbox disintegrated internally. One hour later a chips light illuminated on No. 1 engine followed by a tach generator failure. The rpm was now solely determined by sound.

At 120 nm from NAS Barbers Point, the crew began a 100 fpm, 150 KIAS descent in order to minimize attitude change on the deteriorating prop/gearbox. Several minutes later vibrations increased, with white sparks and traces of smoke coming from the tailpipe. Moments later the No. 1 fire warning light illuminated, and the No. 1 HRD was discharged. One minute later the fire warning ceased. Only No. 2 engine's HRD remained for backup if No. 1 caught fire again.

At 40 nm Lt. Koshiol observed a 1-inch gap between No. 1 prop and its afterbody. No. 1 was slowly walking its way off the deteriorating gearbox. Five minutes later, No. 1 fire warning illuminated again, accompanied by sparks and smoke billowing from the tailpipe and nacelle access doors. At Lt. Koshiol's direction, No. 2 HRD was transferred and discharged into No. 1 engine. Fire warnings ceased five seconds later.

At 12 nm approach, flaps were selected, and rate of descent was slightly increased to establish a steeper than normal glide path. Moments after the descent was established, the gap on No. 1 prop increased to 3 inches. The crew reported No. 1 prop was about to depart the aircraft. At 9 nm the No. 1 prop slowly walked forward, pitched down and departed the aircraft, striking the No. 2 prop, severing 15 inches off symmetrical blades and cutting into the No. 2 nacelle before falling below the aircraft. No. 2 engine rpm decayed to 80 percent with the fire warning blaring. No. 2 E-handle was pulled, but the prop failed to feather, windmilling at 10 percent rpm.

With no fire extinguishers left, the fire warning horn was cancelled. The windmilling prop created severe drag as the aircraft rolled violently to the left. Lt. Koshiol and Lt. Laufer wrestled to control the aircraft. The prop brake finally actuated, stopping No. 2 prop rotation. With the prop stopped, control improved, and Lt. Koshiol set up for a straight-in to runway 4L. As previously briefed, Lt. Laufer held the gear until 1,000 feet and the landing was assured. At 1,000 feet the gear was extended with Lt. Laufer reviewing the landing checklist complete. Moments later the aircraft touched down on centerline, 2,000 feet down the runway, completing its landing roll-out with 2,500 feet remaining.

Occasionally, we get inquiries as to the derivation of the Bravo Zulu feature, as well as the meaning of the term "Bravo Zulu." Bravo Zulu, the precise meaning of which is "Well Done," was apparently first used during World War II, perhaps by Admiral Bill Halsey himself, although the exact date and circumstances are lost. BZ is a category of the signalman's terminology called a "governing group," and is used to set off a group of data or messages which follow the BZ.

Every service safety magazine has its own laudatory feature, and Approach used a succession of titles before settling on Bravo Zulu. The first was "Old Pro," followed by "Good Show" (the British use a similar title), then "Well Done." The first Bravo Zulu appeared in the February 1972 issue of Approach and has become a regular feature of the magazine ever since.

If you want to submit a BZ nomination, here's how.

The nomination must be submitted through the commanding officer of the squadron, chopped through the appropriate air wing, MAG or PATWING. A 5-by-7 black and white photo of the air crew involved should also accompany the story and endorsements. Photos of the event are always welcome, such as a barricade arrestment or landing approach. Views of damaged equipment, i.e., canopies, tires, are also important.

Send the nomination to: Editor, Approach Magazine, Naval Safety Center, NAS Norfolk, VA 23511-5796.

Capt. John M. Kreitzburg, USMC
VMAT 203

Capt. Kreitzburg was the pilot of the lead aircraft during a low-level training mission that had progressed normally until the flight reached the designated exit point. At 1,100 feet AGL and 400 KIAS, he noticed a flash, followed by a loud bang and rapid deceleration, as a bird impacted the port intake.

Recognizing the flameout, Capt. Kreitzburg started a climb, switched to manual fuel in an attempt to recover RPM and told his wingman of the flameout. At 1,600 feet AGL, as RPM decayed to 19 percent, he lowered the nose to maintain airspeed and initiated the alternate air start procedures.

Approaching 300 feet AGL, with no sign of relight, Capt. Kreitzburg began to level off and prepare for ejection. At 200 feet and 250 KIAS, he noticed a slight JPT and RPM rise. He cautiously advanced the throttle to 77 percent. Vibrations were present, but engine indications were normal. While climbing to altitude he declared an emergency and asked his wingman to check for external damage.

Arriving at base, Capt. Kreitzburg performed a variable nozzle, stuck throttle approach landing.

LCdr. Dane McNeil
VA 1287*

Fifteen minutes after taking off from NAS Alameda, LCdr. McNeil's A-7E suddenly lost engine power. He climbed as high as possible using available airspeed and power in case he needed to eject.

LCdr. McNeil contacted the Red Bluff Flight Service Station for assistance. An alert air traffic controller, Mr. Fred Kent, at nearby Arcata heard the distress call and told the pilot he was closer to Arcata than to Red Bluff. He provided LCdr. McNeil with information on the Arcata Airport for an emergency landing and alerted the crash crew, Coast Guard, Arcata Fire Department and Seattle Approach Control.

With the aircraft at minimum flying speed, its deterioriating engine could not produce sufficient thrust to maintain altitude. LCdr. McNeil coaxed the crippled A-7 toward Arcata, keeping clear of populated areas.

He delayed lowering the aircraft's landing gear and flaps until the last possible moment in order to reach the runway threshhold. He touched down and began maximum braking, stopping just 500 feet from the end of the runway.

Postflight inspection revealed extensive internal engine and turbine blade damage.

*VA 1287 is the Squadron Augmentation Unit for Naval Air Reserve Squadron VA 304.

A detail of A-7E Corsair jet engine, which failed, shows internal damage that caused the problem.

PH1 Kenneth Newman

Just because your qualifications are extensive in one aircraft, they aren't necessarily in any other.

Just a Humbling Experience

By Lt. Mike Warriner

In further orienting the approach plate and re-examining the CDI, we turned out to be well left of course and possibly overflying a tower depicted at 2,500 feet AGL.

NAVAL aviators, by profession, are a confident and aggressive group of individuals. Those two traits are invaluable attributes to have when operating an aircraft and performing an assigned mission. It is the rare occasion when confidence and aggressiveness are not rewarded with a successful hop.

Unfortunately, when you step out of that familiar cockpit and into one not so familiar, confidence turns into false security and that can hurt you. Proficiency in one aircraft does not translate into qualification or proficiency in any other. This should be ingrained into the well-trained naval aviator, but it is precisely this individual who is most likely to overlook his limitations.

I learned this lesson the easy way — no harm done, just a humbling experience. It was a no-fly day in our squadron, and an NFO proposed that we salvage the day with some private aircraft flying. It was a genuine IFR day with the ceiling at 800 feet and layers to 15,000, but certainly that didn't concern two carrier aviators, both possessing private pilot licenses and current instrument ratings.

It is important to note that my license was acquired through the common practice of taking the FAA exam after completing Navy flight school, therefore requiring no experience in civil aviation. My squadron mate was a former Certified Flight Instructor with many hours in the Cessna 152 but a little rusty on instrument flight. In fact, this hop was to be a refresher for him under the hood, with me in the left seat as safety pilot.

Once airborne, it became obvious the weather was going to be a serious factor. But we were instrument-qualified and certainly able to handle a short hop in the clouds. What concerned me, however, was the outdated and consequently confusing instrumentation. It was absolutely 180 degrees out from what I was used to. And to further my disorientation, the approach plates were not structured at all like the high altitude plates I'd used hundreds of times. It was proving difficult to verify the precision of the approaches we were shooting, and being in the clouds left us no visual cues.

But after an error-free NDB approach, everything seemed well in hand. It was the second approach that had me questioning my judgment. We had commenced the VOR approach from a good

start, and I was just beginning to get the hang of this civilian instrumentation and the publications. Just about halfway into the penetration, we were at 2,200 feet MSL when the controller came up in a panicked voice and told us to *immediately* level off and alter course to the right as we were endangering our aircraft. This certainly got our attention and we complied immediately. I looked over my copilot's shoulder to examine the approach plate (we, of course, had only one), and it appeared we were *right* of course but, in any case, above the prescribed altitude of 1,700 feet MSL.

In further orienting the approach plate and re-examining the CDI, we turned out to be well *left* of course and possibly overflying a tower depicted at 2,500 feet AGL. A serious mistake I had made was in not fully understanding the instrumentation or the acceptable calibration of the CDI and accepting our drift to what I believed was the right. Most probably, the alert controller saved us from flying through that tower.

I am not sure how close we came to that tower, since we were IMC, but my point is this: Just because your qualifications are extensive in one aircraft, they aren't necessarily in any other. Airborne in the clag is not the time to be learning a new aircraft, even if it is much simpler, without qualified instruction. Genuine IMC is hardly the weather to be in when brushing up on instrument flying.

So don't let aggressiveness and overconfidence put you in a box and leave you unfamiliar and unprepared. ◄

Lt. Warriner is an S-3A Viking pilot attached to VS 22 home ported at NAS Cecil Field, Fla. He is the aviation equipment branch officer and deploys in USS *John F. Kennedy* (CV 67).

. . . I called for nosewheel steering and took control of the aircraft. The power levers were quickly retarded, and asymmetric power was applied in an attempt to guide the aircraft back to the center of the taxiway. In a few seconds, though, the P-3 had departed the taxiway and moved onto the soft shoulder. . .

P-3 Merry-Go-Round

By Lt. Rudy Perez

Our flight was to be a turnaround event in a P-3 that had just returned to the line after a pilot trainer. The port tires required changing, and the No. 4 engine reverse shaft horsepower needed a minor adjustment. The maintenance was completed as we preflighted. Finally, the aircraft was ready, and the crew was briefed on the day's evolution.

We would quickly check the No. 4 reverse shaft horsepower and, if satisfactory, take off on a productive training flight. As plane commander, I jumped in the right seat while my non-designated third pilot took the left. The flight engineer under instruction assumed the FE seat. An instructor engineer took his place behind to coach the less experienced man. Engine starts were uneventful, and soon we were on the parallel taxiway. I requested and received permission from the tower to conduct ground checks near the approach end of the runway.

To give the engineer under training a little instruction, the instructor FE and I decided to perform the entire fuel governor, pitch lock, reverse horsepower check. This required advancing the power levers over the ramp and initially setting approximately 1,500 SHP on each engine. Although not an excessive amount of power, it is sufficient to require a very efficient means of aircraft restraint — namely, brakes.

The procedures were reviewed and the flight station set to commence the check. The third pilot reported he was ready. Actually he wasn't. He failed to place his hand on the nosewheel steering control wheel, which is only available on the left side. I didn't notice.

The power levers were advanced rapidly up and over the ramp, and the aircraft swerved rapidly to the right. I called for nosewheel steering and took control of the aircraft. The power levers were quickly retarded, and asymmetric power was applied in an attempt to guide the aircraft back to the center of the taxiway. In a few seconds, though, the P-3 had departed the taxiway and moved onto the soft shoulder.

Soon we caught sight of the control tower that had originally been behind us as the aircraft pivoted about the entrenched starboard main mount. Aircraft movement was finally halted only after full reverse was applied to the two port engines **but not until two 360-degree turns had been completed!**

The post-incident investigation revealed that the port brake had failed. Furthermore, I discovered that my third pilot had been uncomfortable with the port brake check conducted out of the chocks.

We know that most emergencies in a P-3 can be handled in an orderly and systematic fashion. However, some situations develop rapidly and require immediate action and, more important, *anticipation*.

Had this incident occurred in a congested area, the consequences would most likely have been more serious, or even disastrous. Something that appeared so routine sure got complicated and frightening, very quickly. We were very lucky that day. ◄

Lt. Perez flies the P-3 as patrol plane commander and mission commander with VP 47, NAS Moffett Field, Calif.

I Had Forgotten How Fast Things Happen

By Capt. D.H. Wassmer

IT seems as if I've been flying helicopters all my life. During those 20 years, I've accumulated more than 4,000 hours in eight types of helicopters in seven squadrons. I pride myself on never having hurt anyone who flew with me, nor having broken an aircraft. But, it isn't that the opportunities haven't been there.

There was the time as a student in the training command when a tail rotor driveshaft coupling failed in my H-34 as we departed OLF Spencer Field at 500 feet over Florida pines. Another time, flying UH-1Bs in Vietnam, we had controllability problems, the kind where it took four hands on the cyclic, my left leg on the collective, and the copilot working the rudders heading back to base over the Mekong Delta. Not to mention the headwork problems as the Macho Man of unbriefed one-on-one hassling when one H-2 SAR det relieved another at North or South SAR over the Gulf of Tonkin. Add to those the normal hydraulic, electrical, instrument, fuel and other maintenance problems that have been successfully handled, and you begin to imagine my confidence in flying helicopters.

As XO of the ASW test and Evaluation Squadron (VX 1), I had scheduled myself in the SH-60B, trying to accumulate enough hours to be NATOPS-qualified. The aircraft commander was a fellow H-2 LAMPS HAC with whom I'd flown on a number of occasions in both the H-2 and H-60. I had a great deal of confidence in him. The aircraft was one of our best flyers, and we planned on picking it up as a hot-seat for this flight. The event was planned as dedicated field work at an OLF about 10 miles from the base. It was a beautiful spring afternoon in sunny southern Maryland.

We conducted a by-the-book NATOPS brief and discussed possible emergencies. We planned data link work en route to the OLF, since the ground station was up and operating that day. I took the right seat, while the HAC took the left. No crewman was required.

Everything was fine as we manned up

Capt. Wassmer (l.) and Lt. Jon Berg-Johnsen, the HAC in the accompanying story, stand beside a squadron SH-60B.

and took off. As we cleared the control zone, I switched to approach, climbing to 1,000 feet for radar following and flight advisories. The HAC switched to the data link ground station. We completed all the checklists, and I had once again gotten away from the mahogany monster that seems to control my life more with every passing year.

We proceeded through the first fly-to point and headed toward the second, which was beyond a noise abatement area over the Potomac River. I called approach and told them I was climbing to 3,000 feet to avoid the area.

The HAC mentioned that the data link was clearer than a Ma Bell telephone line. During the climb, I noticed all my pitot static instruments were oscillating: BAR ALT from 1,500 to 2,000 feet, airspeed from 80 to 110 knots, and VSI from 250 to 750 feet-per-minute. As a natural reaction, I lowered the collective, mentioned it to the HAC and cross-checked his instruments. His instruments were fine, and mine had settled down a little. Nothing else was out of the ordinary. It was a beautiful VFR day.

I continued to climb, since we were now coming to an inlet just before the peninsula designated as a noise abatement area. The HAC mentioned a howling back in the cabin. I concurred, thinking it could be the air rush from the cabin door having come ajar. I noted a high- to medium-frequency vibration in the collective. The HAC agreed.

Bang! The nose swung and I bottomed the collective. We had lost power and I turned hard left, back toward land. (I never was a great swimmer.) I got out the Mayday and position report. The immediate landing-ditching checklist was completed, while we proceeded to the farmer's field. The rudder pedals went stiff, and we maintained 100 knots to increase the effectiveness of the flare and slip stream. I figured the collective pull may be complicated by the lack of tail rotor control. The IFF was switched to EMERGENCY.

The No. 2 engine had shut down and rotor speed was 104 percent. I cross-checked the mirror. No fire. I had to continue downwind a little longer to give myself as much room as possible into the wind. Some southern-Maryland farmer is going to be rich this year, I thought.

I told the HAC to secure No. 2, which he did. He said, "You still have power." I looked down and there was No. 1 purring at 95 percent power turbine speed. I had set myself up to make an emergency autorative landing. I was surprised and relieved to discover I didn't have to. During the brief, we had established that I would retain control of the aircraft, while the more experienced HAC would troubleshoot. He could take control if he felt it necessary. At some point during the brief, I should have mentally tapped myself on the shoulder and said, "Don't forget Doug, you've got two engines here so aviate first."

I pulled in power gently and leveled off at 1,000 feet. I called approach and redefined the situation in my most confident voice, saying we were returning to base and switching to tower. We made an uneventful, boost-off, single-engine emergency landing on the runway.

Time from the bang to regaining power and level flight was about 13 seconds.

Boy — I had forgotten how fast things happen! ◄

Capt. Wassmer flew combat tours in Vietnam with HC 7 and HAL 3, and has commanded HSL 35. He has been an advanced helicopter instructor with HT 18, and has attended the Naval War College. He is the XO of VX 1 at NAS Patuxent.

. . . There's highway I-5. There's downtown just ahead. I can see the buildings. I'm out of here . . .

A Sure Thing Never Is

By LCdr. D.P. Davis

DURING carrier work-ups off the coast of southern California, the air wing was conducting opposed night war-at-sea exercises. We had been briefed that to better simulate actual losses, certain aircraft would be diverted to NAS North Island rather than recover aboard ship. This would test the ship and air wing's ability to account for all the players and make the necessary reports.

As a "nugget" fresh out of the RAG, I never expected to be selected to spend the night on the beach so I paid little attention to the brief. I had never been to North Island but didn't need to look at the approach plates or read the supplement because it wasn't going to be me.

As NH302, I launched at 2030. The exercise commenced at 2100. Midway through the ingress for the strike, I was told to switch to departure frequency. Departure instructed me to join with NH406 and proceed to NAS North Island, where I would land and expect an overhead for the next morning. I contacted NH406 to determine his position so I could join on his wing and be led into North Island. The voice I heard was not that of a section leader but a fellow nugget who had left the RAG with me.

Grover was senior to me so I planned to join him, and he'd have the lead. However, he was in a better position to rendezvous on me, so he suggested that I just keep the lead. He obviously was as prepared for this trip as I. "OK, I've got the lead" I said. Now, I thought, how can I do this without screwing it up? Gee, I wish I had looked at the approach plates. Where are they? Oh well, I don't need to worry; I'll just ask for flight breakup to individual GCAs — a sure thing!

During the next 20 minutes, I experienced what few pilots have and even fewer would want to. I got to see downtown San Diego from 200 feet at night.

Flight breakup went fine: "NH302, turn left 050, vectors runway 36. NH406, continue present heading and switch approach, 342.3."

"Roger, 342.3."

"NH302, turn left 360. When steady, perform landing checks."

"Approach, NH302, checks complete, three down and locked."

"NH302, you're approaching glide slope, begin descent, need not acknowledge further transmissions."

"NH302 on glide slope two miles, report the runway in sight."

I should be able to see the runway. The visibility is good. I can see lights and the city. Where is it?

"NH302, on glide slope one mile. Do you have the runway in sight? It should be straight ahead."

Blue taxi lights off to the right — maybe that's it. No, it couldn't be. "Negative."

"NH302 approaching minimums, do you have the runway in sight?"

There's highway I-5. There's downtown just ahead. I can see the buildings. I'm out of here. "Approach, NH302 is executing missed approach — I hold myself approaching downtown."

"Roger." Long pause. "NH302, say TACAN position."

Why hadn't I thought of that before? I hadn't once cross-checked to see where I was in relation to the TACAN, which is at the field at North Island. "Roger, I'm on the 010 at 8 passing 1,500 feet."

"Radar contact. Turn right heading 190. Traffic at 2 o'clock is on final for Lindbergh Field." That explains the blue taxi lights I saw earlier. I flew right through Lindbergh Field dirty at 400 feet! How could this have happened?

From that point on, the approach went normally. I landed to find my wingman already out of his aircraft wondering where I had been. "You wouldn't believe me if I told you, Grover." I went into base ops and called the control tower. After a long discussion, the supervisor explained how they had inadvertently locked up on my wingman's aircraft, which was eight miles behind me. They had been giving me vectors and glide slope based on his position, and I had blindly followed them.

I was as much at fault as they were for allowing it to happen. If I had only studied my divert field prior to launch or checked my TACAN to cross-check relative position. But when I came under positive radar contact, my mind went into back-up mode. Some people might argue that it's there regularly, but I allowed myself to be vectored through a high density airport and into a city that is studded with buildings and guy wires that rise above GCA minimums.

When any doubt arises as to the best way to enter a strange field, the precision approach is still the way to go. Make it even better by preparing ahead of time. Know the approach plate and have a back-up NAVAID. I had always relied on the GCA as a sure thing. I learned a valuable lesson that night — "A sure thing never is." ◄

LCdr. Davis is safety officer for VA 22, an A-7 squadron based at NAS Lemoore, Calif., and embarked in USS *Enterprise* (CVN 65).

Writing for Approach

The Questions Our Contributors Ask Most Often

How do I submit an article?

It should be three to five pages, preferably typewritten, **definitely** double-spaced. Mail it to the address on page 1 of any issue. Include a cover letter with the author's address and phone number. We also need a short professional biography of the author. Except for Bravo Zulu submissions, there are no endorsement requirements. The article is from you to the Approach editor.

What should I write about?

The best Approach articles are the "There I Was" . . . stories: first person narratives of actual in-flight emergencies.

Other types of articles we place a priority on are:

— Technical articles that are presented in ready room language: wake turbulence, transonic performance or low-level turn characteristics.

— Humorous articles.

— Articles that present a nugget's view of safety.

— Editorials. Got an axe to grind about safety? Send us your two cents worth.

We also need:

— Photos. Lend us your Sierra Hotel snapshots from your "I Love Me" album. We need photos of all aspects of flight operations, briefings, preflights and cockpit situations as well as in flight.

— Poster ideas. Just describe it — we'll do the rest.

— Feedback. How is Approach doing? Has an Approach article helped you out of a bad situation? Give us a call or drop us a line.

— Cartoons

— Ideas. What would you like to see in Approach? Let us do the work.

When will my submission be in the magazine?

If accepted, it will take from four to six months. We will send you a card acknowledging receipt right away. Our chop chain and production cycle account for most of this time. Each issue goes to press two months prior to publication month. Feel free to call about the status of your contribution.

Do you use every item submitted?

No. Many items are killed for a variety of reasons. Some well-written articles deal with topics that we feel have just been overdone. We believe, however, that every worthy article that is fit to print will make it eventually. Some articles will move more quickly than others due to the fact that they fit a theme already under production or address a topic that hasn't been covered. A call to the editor can give you the latest gouge on what the magazine is looking for. Call us!

Will my article get edited?

Yes. We reserve the right to change any submission to make it clearer and easier to read and understand. But we are equally committed to preserving the author's style and intent. We try to edit as sparingly as we can.

. . . Had we been IMC, neither pilot would have been alerted to take evasive action. The call from center would have come too late to avert a collision. We never would have known what hit us . . .

My Near Miss

By Lt. Patrick J. Danaher, USCG

IT happened 70 NM from home plate, near the end of an eight-hour patrol flight. The mission called for IFR legs to and from a patrol area with low-level operations in between. On the return leg, cruising at FL 240 and expecting a lower altitude any minute, the navigator reported hearing an ELT on one of the radios.

As I adjusted the squelch and tried to get a DF cut on the signal, I heard center clear us to FL 210 and the copilot's readback. I looked up from the radio control head, retarded the throttles and ran the thumb wheel on the autopilot to a few degrees nose down for the descent. While doing this, I noticed the copilot twisting in a change to the altitude selector unit installed on the glare shield. With the descent established, I pushed the altitude select button on the autopilot, which provides automatic leveling at whatever altitude is set in the unit.

I returned to the task of tuning in the ELT on the DF gear. After a moment, I glanced up at the altimeter to check on the descent and noticed we were rapidly approaching FL 210. I quickly looked at the altitude selector button to make sure that it was engaged and then read the altitude selected in the unit on the glare shield. It read 12,000 feet, not 21,000 feet. I asked the copilot if we had been cleared to 12,000 feet, and he replied that we had.

I figured that center must have called while I was listening to the ELT with the squelch disabled, and I just hadn't heard the transmission. **Actually, the copilot had transposed the first two digits.** Center called again and asked us if our speed had increased, and if so, to reduce it due to commercial jet traffic he wished to have cross in front of us. (Just before the descent, center had asked for our indicated airspeed but made no comment about why he wanted the information or crossing traffic.) The copilot looked out the right window and spotted the airliner — closing on a collision course!

To comply with center, I slowed the aircraft by raising the nose, but we still had a gentle rate of descent working. The copilot, very aware of an extremis situation, raised the nose further, stopping the descent at about 20,300 feet. The airliner, assigned FL 200, commenced an emergency descent to avoid us, and center again questioned our altitude. Some discussion followed, and it became obvious what had happened. We climbed to FL 210 and from there continued to our destination. As we taxied in, ground control relayed a message from center to give them a call when we got to base ops.

Had we been IMC, neither pilot would have been alerted to take evasive action. The call from center would have come too late to avert a collision. **We never would have known what hit us.** Investigators might have discovered the 12,000 feet setting in the altitude selector unit. The final assessment would have correctly indicated pilot error as the cause of the crash. This disturbing point lingered in my mind. How did the error occur, and how can it be avoided?

In my opinion the causes of the near midair were:

- Distraction — pilot investigating an ELT signal.
- Crew coordination — three of the crew heard center assign us to FL 210. The other heard FL120.

I offer two recommendations on how to avoid this potential mishap.

Adjustments of the altitude select unit should be accomplished by the pilot flying the aircraft. This would have precluded the erroneous setting and the resultant near-miss. It would also promote pilot attention to ATC clearances and pilot to copilot coordination and communication. This would be similar to setting a change in the altimeter.

Finally, navigators and flight engineers must be especially alert to pilot compliance with ATC instructions and their responsibilities as crewmen. ◄

Lt. Danaher is the fixed-wing safety officer at the U.S. Coast Guard Air Station, Clearwater, Fla. He has 2,500 hours in C-130s.

"Thanks XO"

By Cdr. Wayne R. Reeves

LIKE many of you, I've got my share of "been there" and "there I was" stories, most of which have been told and retold over cool ones at the club. And like most of you, one or two of those stories do not relate some of my prouder moments. The article by Cdr. Bouchoux, XO of VF 1, in the July 1986 issue of Approach, made me reflect on one of those experiences and how *my* XO handled it.

There I was, a "seasoned" Lt. EC-130Q aircraft commander on a routine overwater flight in the Western Pacific. (Of course, all flights are over water when you take off from an island.) The flight was planned for 10 hours with a final destination of Osan AFB, Korea. We were to do a little island hopping, flying southwest to Yap, north to Iwo Jima and then west to Osan. Weather for takeoff, en route and landing was predicted to be VMC. With 11 hours of fuel plus reserves on board, the flight was no sweat; my crew and I would show the new XO, on his first flight in the squadron, how it was supposed to be done.

My first "sweat" came after we made our turn north over Yap. When I went up to the flight deck to relieve my 2P, I noticed a "red glow" under his foot on the glare shield. The glow was the door warning light, indicating that one of the aircraft doors or the ramp could be getting ready to open. We began to execute emergency procedures, and I chose to descend to below 10,000 feet to troubleshoot and conserve oxygen. The problem turned out to be a microswitch that had been tripped by one of the crew doing some work on the ramp.

We quickly got things squared away and were ready to climb back up to altitude, but we couldn't get clearance from ARTCC. Didn't they know I was burning up gas and would quickly become fuel limited? It seemed like an eternity before we got our climb clearance. A quick check of fuel logs at altitude showed it would be close, but if we had to, we could divert for more fuel.

As we were going feet dry, we rechecked our fuel logs. It had gotten a little closer, but based on performance to that point, we would have 6,000 pounds of fuel at the initial approach fix (IAF), NATOPS minimum. Here's where "get-there-itis" crept in; I elected to press on and not drop in at Kadena AFB for more gas. We kept checking the fuel situation as we went up the peninsula; fuel flow and logs were still showing we would have 6,000 pounds at the IAF over Osan at our ETA. Weather was checked and Osan was still better than 3,000/3. We pressed on.

The navigator piped up with a revised ETA. Seemed we were experiencing a little more head wind component from the jet stream than originally anticipated. Ouch! Fuel gauges were at their lower limits where their accuracy becomes questionable. Passing over Kwanj Ju ROK Air Base, the gauges went from telling us we'd be able to get there to "no way"; the fuel logs still said we could make it.

I then made the first correct decision of the trip and elected to use the gauges, which were now showing minimum fuel. We declared minimum fuel and requested descent for landing at Kunsan AB, short of Osan. We checked the weather and found that Kunsan was diverting aircraft to Osan because the weather was below landing minimums.

I immediately turned back to Kwanj Ju, requesting priority landing for low fuel. The cool, calm and collected American terminal controller we were used to working with was now a Korean who turned out to be more nervous than I. We finally had to declare Emergency Fuel (we were already there) to get him to react to the situation and clear us to land. He did and we did.

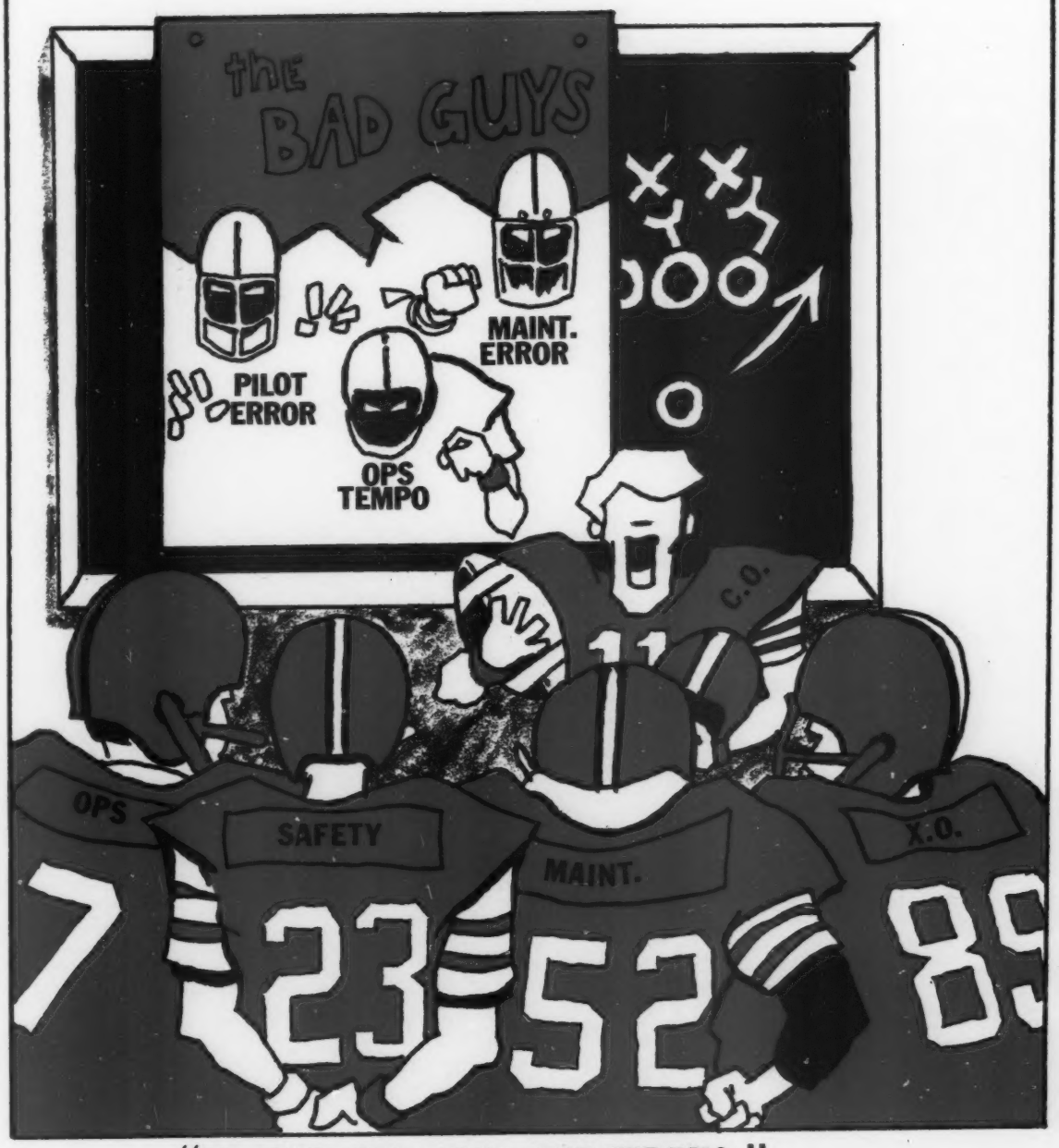
Now that we were on the deck, a little scared and not suffering from "get-there-itis," I reviewed the bidding. Although we were in compliance with the rules — 6,000 pounds overhead with destination weather VMC — I had pushed a little to get there, leaving no margin for error. A math error on the fuel log that wasn't caught earlier, coupled with an extra head wind component, finally put us in the "can't get there from here" position.

The Air Force liaison detachment at the air base helped us put the bird to bed for the night and got us quarters. My roomie? You guessed it, the XO.

That was the longest night of my life as he and I relived the events and decisions, reason for decisions and my overall thought process. When it was over, there was no doubt in my mind that I had blown it, but I definitely knew why. My penance was to tell the other squadron pilots and flight engineers exactly what happened and why, so that they could learn from my mistakes. I held that meeting when I got back to the squadron. I hope that now, some years later, this tale will complete the job and share the lesson with you. Thanks, XO.

Cdr. Reeves served in VAQ 33, VT 2, VQ 3 and VQ 4. He qualified as aircraft commander, mission commander and flight instructor in the EC-130 G/Q and KC-130F. He is currently assigned to the Naval Space Command as Head, Manpower and Training Branch.

SAFETY TEAM



"AW RIGHT MEN, DON'T DROP THE BALL."

Poster idea contributed by Capt. T.R. Hazard, HMM 164
Graphics by Mike Pemberton

PRACTICE

Sound
Aviation
Fundamentals
Every
Time
You fly
because
Sound
Aviation
Fundamentals
Eliminate
Terrifying
Yarns
and
Sound
Aviation
Fundamentals
Extend
Thy
Years